INFORMATION AND COMMUNICATION TECHNOLOGY IN THE COMPETENCE BASED LEARNING IN LOWER PRIVATE SECONDARY SCHOOLS OF NAKASONGOLA DISTRICT, UGANDA

BY

SENDAGIRE YUSUF

2021-01-03228

A DISSERTATION SUBMITTED TO THE COLLEGE OF EDUCATION, OPEN DISTANCE AND E-LEARNING IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A DEGREE OF MASTER OF EDUCATION IN EDUCATION ADMINISTRATION AND MANAGEMENT OF KAMPALA INTERNATIONAL UNIVERSITY

OCTOBER, 2023

DECLARATION

I Sendagire Yusuf declare that this dissertation is my original work and has never been submitted to any institution for any award.

Sign.....Date: .....

APPROVAL

This dissertation by Sendagire Yusuf has been written under my supervision and is now ready for submission with my approval.

Sign ..... Date: .....

Ass. Prof. Kayindu Vincent

(Supervisor)

DEDICATION

I dedicate this research work to my parents Gitta Ali and Nabbaale Mariam who have inspired my education, and to my beloved wife and children for their love and patience.

No words can express my gratitude for them, for they have always supported and encourage me.

ACKNOWLEDGEMENT

First and foremost praises and thanks to God, the almighty for his showing blessings through my research work.

I would like to express my deep and sincere gratitude to my research supervisor associate professor Kayindu Vincent for giving the opportunity to do research and providing invaluable guidance through the research His dynamism, vision, sincerity and motivation have deeply inspired me. He has guided me with the right research methodology and present the research works and clearly as possible. It was paramount privilege and honour to work and study under his guidance. I am therefore extremely grateful to study under his guidance and the time he has offered to me/. I would like to thank him for his friendship empathy and great sense of humour. I am extending my heartfelt appreciation to his family members, friends and relatives for the acceptance and patience during the discussions I had with him on research work and thesis preparation. I am extremely grateful to my parents for their lover, prayers, caring and sacrifices for educating and preparing me for my future. I am very much thankful to my dear wife, sons and daughters for the love and understanding, prayers and constantly giving me courage to complete the research work my special thanks goes to my friends for interest shown to complete this thesis thankfully.

TABLE OF CONTENTS

DECLARATION ii
APPROVAL iii
DEDICATION iv
ACKNOWLEDGEMENT v
TABLE OF CONTENTS vi
LIST OF TABLES ix
ABSTRACT x
LIST OF ABBREVIATIONS xi

CHAPTER ONE 1
INTRODUCTION 1
1.1 Background to the study 1
1.1. 1 Historical Perspective 2
1.1.2 Theoretical perspective 7
1.1.3 Conceptual perspective 7
1.1.4 Contextual Perspective 9
1.1 Statement of the problem 11
1.2 Purpose of the study 12
1.3 Research objectives. 12
1.4 Research questions 13
1.5 Scope of the Study 13
1.5.1 Geographical Scope 13
1.5.2 Content Scope 14
1.5.3 Time Scope 14
1.6 Significance of the study. 14

CHAPTER TWO 15
LITERATURE REVIEW 15
2.0 Introduction 15
2.2 Conceptual framework 20

2.3 Related Literature 21
2.3.1 General view on ICT in the competence-based learning 21
2.3.2 ICT facilities availability in schools 26
2.3.3 Influence of Teachers' attitude towards ICT in the competency-based curriculum 35
2.3.4 Students' attitude and capacity in the success of a competency-based curriculum 37

CHAPTER THREE 40
METHODOLOGY 40
3.0 Introduction 40
3.1 Research Design 40
3.2 Population 40
3.3 Sample size and selection 40
3.5 Data Collection Methods 41
3.5.1 Questionnaire Survey method 41
3.5.2 Interview method 41
3.6 Quality control 42
3.7 Data Processing and Analysis 42
3.7.1 Quantitative Data 42
3.7.2 Qualitative data 43
3.8 Ethical Considerations 43

CHAPTER FOUR 44
PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA 44
4.0 Introduction 44
4.1. Response Rate 44
4.2. Respondents 45
4.2.1 Demographic traits of Teachers as respondents 45
4.3 Results as per the Research Objectives 48
4.3.1 To what extent are ICT facilities available in lower private secondary schools, Nakasongola district, Uganda? 48

4.3.2 To what extent are teachers capable of integrating ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda? 52
4.3.3 What is the perception of teachers towards using ICT in the implementation of a competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda? 55
4.3.4 Students' attitude and capacity to use ICT IN competency-based learning 56

CHAPTER FIVE 60
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS 60
5.1 Discussion 60
5.1. 1 To what extent are ICT facilities available in lower private secondary schools, Nakasongola district, Uganda? 60
5.1.2 To what extent are teachers capable of integrating ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda? 62
5.1.3 What is the perception of teachers towards using ICT in the implementation of a competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda? 64
5.1.4 Students and ICT integration in the competency based curriculum 66
5.2 Conclusions 68
5.3 Recommendations 69
5.4 Areas for further studies 69
REFERENCES 70
APPENDICES 73
APPENDIX A: Table for Determining Sample Size for A Population of A Given Size 73
APPENDIX B: QUESTIONNAIRE 74
APPENDIX C: INTERVIEW GUIDE 77
FOR TEACHERS 77

LIST OF TABLES

Table 4.1: Response Rate 44
Table 4.2: Demographic Characteristics of the Teacher Respondents (n=75) 45
Table 4.3: Demographic Characteristics of the Student Respondents (n=200) 47
Table 4.4: showing the extent of ICT facilities availability in lower private secondary schools, Nakasongola district, Uganda 48
Table 4.5: showing the extent of teachers' capacity to integrate ICT in the competency-based learning in lower private secondary schools, Nakasongola district, Uganda 52
Table 4.6: Perception of teachers towards using ICT in the implementation of a competency-based learning in lower private secondary schools, Nakasongola district, Uganda 55
Table 4.7: showing Students' attitude and capacity to use ICT in the competency-based learning 57

ABSTRACT

The current study was carried out to assess the use of information and communication technology (ICT) in the competency-based learning in lower private secondary schools of Uganda, taking a case study of Nakasongola district. Specifically, it was hinged on four questions namely:1. To what extent are ICT facilities available in lower private secondary schools, Nakasongola district, Uganda?; 2. To what extent are teachers capable of integrating ICT in the competency-based learning in lower private secondary schools, Nakasongola district, Uganda?; 3. What is the perception of teachers towards using ICT in the implementation of a competency-based learning in lower private secondary schools, Nakasongola district, Uganda?; and What is the students' attitude and capacity to use ICT in the competency-based learning in lower private secondary schools, Nakasongola district, Uganda? This study used the cross- sectional survey research design. The population of the study was 122 teachers, 1300 students of S.1-S.3 classes where the competency-based curriculum was as of the year 2023 still operating, and 12 head teachers in the selected 12 schools in Nakasongola district and a sample size was 400 respondents. Out of the 100 teachers who were given questionnaires, 75 returned them. And as for the students, those who participated in the study were 200. The findings were that the ICT facilities' availability in lower private secondary schools of Nakasongola district was to a small extent. The majority of private schools in the district are lacking ICT facilities. Secondly, teachers are able to integrate ICT in the competency-based curriculum to a small extent. This means that the majority of teachers in Nakasongola are poor at ICT skills integration in teaching. They said that what they know best is the use of smart phones in searching for the required materials/work but they are limited with money for buying mbs to access the internet. They also said that it is time consuming, so they teach and assign the students to use ICT to do assignments. Thirdly, the majority of teachers have a negative attitude towards ICT integration in the competency-based curriculum. Lastly, to a large extent, students are capable of integrating ICT in the competency based curriculum and they perceive it to be good. In other words, the majority of students have a positive attitude towards ICT. Although the majority of them do not have the capacity to own personal computers and Smartphones, they access these services from friends outside school (as revealed during oral interviews). The study concludes that the competency based curriculum which was rolled out in the secondary schools of Uganda in 2020 has not yet been properly appreciated and understood by some teachers especially those in rural areas like Nakasongola. In this curriculum, students are supposed to be at the centre of learning therefore learning is supposed to be learner-cenred and the teacher's role is just to facilitate learning. Because of this, many teachers have perceived it to be the role of students to look for, access and use the ICT equipment to research on what teachers ask them to do. They think the learners can do it all, come and present in class before the teacher, thus thinking that students need the ICT more than the teachers. Because of this, many teachers have relaxed on ICT skills acquisition and integration in teaching. The researcher therefore recommends that just as the government has made efforts to supply ICT equipment in many government aided secondary schools it should as well supply them to private schools since private schools pay taxes to the government and they supplement government efforts in the provision of education to the masses. Secondly, refresher courses are necessary to the teachers regarding how ICT should be integrated in teaching regarding how best teachers and students can do it. These courses should involve both teachers and students since both parties need this knowledge.

LIST OF ABBREVIATIONS

CBAM	Concerns Based Adoption Model
CBE	Competency Based Education
CPLs	Professional Learning Communities
ELL	English Language Learner
GDP	Gross Domestic Product
GEM	Girls Education Movement
GIS	Geographical Information System
IBE	International Bureau of Education
ICT	Information Communication Technology
IDRC	International Development Research Centre
IGG	Inspector General of Government
IT	Information Technology
KSA	Knowledge Skills and Abilities
MBS	Megabytes
MOOC	Massive Open Online Course
MTN	Mobile Telephone Network
NCDC	National Curriculum Development Centre
NCES	National Centre for Statistics
NWSC	National Water and Sewerage Cooperation
PBS	Public Broadcasting Service
PD	Professional Development
SAQs	Self Administered Questions
SMC	School Management Committee
SMS	Short Message Service
SOCQ	Stages of Concern Questionnaire
STEM	Science Technology, Engineering and Mathematics
UCC	Uganda Communication Commission
UNESCO	United Nations Educational Scientific and Culture Organization
UNICEF	United Nations Children's Fund
US	United States
WGU	Western Governors University
RCDF	Rural communication development fund

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Information and communications technology (ICT) is a dominant and pervasive part of modern life that has changed every aspect of human society. The government focuses on the comprehensive use of ICT to reach its goals stipulated in different official documents and policies. In Uganda, ICT is the foundation for long term, sustainable and efficient government services, GDP growth, communication, corporate growth, economic development, financial transactions, and the global distribution of jobs. Advances in information influences the value of investments, living standards, patterns of work and leisure, business efficiency and productivity, and spur competition in the market place. The ambition to develop knowledge-based society and the growth of regional and global competition in the jobs market necessitated the shift to a competence- based curriculum to address the issue of the shortage of appropriate skills in the Ugandan education system. In the competency- based curriculum, learners are able to get the opportunity to apply what they have learned to real life situations and to the success of the leaning delivery.

The National Curriculum Development Centre and the Ministry of Education and Sports rolled out the lower secondary school curriculum in February 2020 aiming at producing graduates with employable skills. A competence- based curriculum is a curriculum that emphasizes that learners are expected to do rather than mainly focusing on what they are expected to know. In. principle, Competence based curriculum is learner- centered and adaptive to the changing needs of students , teachers , and society. It is the curriculum that emphasizes the complex outcomes of a learning process (i.e. knowledge, skills and attitudes to be applied by learners) rather than mainly focusing on what learners are expected to learn about in terms of traditionally- defined subject content. In principle such a curriculum is learner- centered and adaptive to the changing needs of students, teachers and society. It implies that knowledge, skills and attitudes to situations they encounter in everyday life. Competency- based curricular are usually designed around a set of key competences/competencies that can be cross- curricular and or Subject-bound. Competency based education helps students develop and demonstrate mastery over a topic, builds a culture of

equity and inclusivity, and prepares students for life beyond the walls of their school (National Curriculum Development Centre, 2020).

Generic skills are also known by many other terms such as soft skills, key skills, common skills, essential skills, employability skills, basic skills, necessary skills, and competencies skills, and environments are chosen so that learners can acquire and apply the knowledge, skills and attitudes to situations they encounter in everyday life. Competency-based curricula are usually designed around a set of key competences that can be cross-curricular and/or subject-bound. Competency based education helps students develop and demonstrate mastery over a topic, builds a culture of equity and inclusivity, and prepares students for life beyond the walls of their school (National Curriculum Development Centre, 2020).

Generic skills are also known by many other terms such as soft skills, key skills, common skills, essential skills, employability skills, basic skills, necessary skills, competencies skills, and transferable skills. Nabi and Bagley (1998), have divided the generic skills into three categories which are personal skills, communication skills, and problem solving skills. Bennett, Dunne and Carre (2000) have reported based on their research findings that generic skills can be presented in four broad areas of management skills namely management of self, management of others, management of task, and management of information. Crosbie (2005) had listed the eight soft skills that are needed by all individuals: collaboration/teamwork, communication skills, initiative, leadership ability, people development/coaching, personal effectiveness/personal mastery, planning and organizing, and presentation skills.

1.1.1 Historical Perspective

Competency based curriculum has been in existence in the world for many decades (Klein-Collins, 2012; Tuxworth, 1994)The competency-based education was formed as an educational trend in the United States of America. Its initial idea was adopted from the so-called generative grammar by N. Chomsky who declared in 1965,"…fundamental difference between the competence or knowledge of language and the application or actual use of language" (Chomsky, 1998). In the late 1960s, such difference was understood much wider than its original linguistic context and it was used in pedagogical and philosophical experimentalism. The experimental essence of the competency-based approach is currently moving to historically generative context

as the ideas of competency have spread far beyond a single trend and have been accepted almost by everyone, including some conformist educational schools. Competence-oriented education is based on the specification or definition of what constitutes a certain competence in a given field of activity (traditionally, a significant amount of research is performed in order to identify levels of competence), in which the required level of competency is formed by characterization and specification of the tasks for which the levels of performance are set. When characteristics of such type have been identified and put on their place in the hierarchy of a complex phenomenon of reality, an instructional sequence shall be developed in order to enable the students of this activity type to be more efficient in achieving their set of objectives-characteristics. Within the competency-based approach, the time required for mastering a competence may vary, and the objectives set in the course of education shall remain unaltered, while existence and provision of a number of alternative ways for a learner to achieve the declared objectives is considered to be the highest concentration of an educational approach of such type. A psychological idea that different individuals have different learning technologies and are predisposed to different learning styles is assumed as a starting point. Since the main objective of the competency approach to education is not ranking the students, but teaching them to achieve their goals, this approach implements an attempt to increase the student's probability of success by providing various instructional routes, wherefrom the future specialist may choose the one that suits his personal learning style (Nakabugo, Bisaso, & Masembe, 2011).

The history of competency-based programs in US higher education is distinguished by three overall phases: (a) innovative teacher education programs in the 1960s and beyond; (b) vocational education programs in the 1970s and beyond; and (c) more recent programs over the last decade and a half, particularly those taking advantage of online or hybrid models, advances in adaptive learning technology, or direct assessment.

The initiation of CBE per se has been traced to 1968 in US higher education, when 10 colleges and universities were funded by the US Office of Education to develop training programs for elementary school teachers (Ford, 2014; Klein-Collins, 2012; Tuxworth, 1994). These pilot programs, which represent the first phase of competency-based models in higher education, were part of broader efforts to reform teacher education in the 1960s, specifically to improve teacher preparation and the accountability of teacher education programs. These pilot CBE programs

initiated the first widespread use of the word "competency" in association with teaching and learning (Ford, 2014). In addition, several key characteristics associated with current CBE programs were prevalent in these training programs, including the specification of competences to be learned (including what a learner should be able to do), the modularization of instruction, the use of evaluation and feedback, and the personalization of instruction (Ford, 2014; Tuxworth, 1994).

By the early 1970s, elected officials, state departments of education, and state teacher certification agencies were promoting competency-based models extensively and some states began mandating the use of CBE for teacher training, which led to strong reactions by higher education institutions. There were objections about institutional autonomy and academic freedom, critiques relating to the pace of change required (given the newness of CBE and its lack of a solid research base), and practical considerations regarding mandating CBE as the sole system of teacher education and training. In Texas, for example, a court ruled that mandating a single form of teacher education was unconstitutional (Tuxworth, 1994). Some conceptual models for CBE were developed, but there was widespread divergence in implementation and little agreement about what constituted a competency-based approach (Burke, Hansen, Houston, & Johnson, 1975). Nonetheless, even as CBE waned as an overall conceptual model for teacher education programs, many of its characteristics – such as a focus on student outcomes or competencies, modularization of instruction, use of evaluation and feedback, and personalization of instruction – began to be embraced by many teacher education programs, and to find their ways into K-12 schools (Tuxworth, 1994).

Some of the conceptual models for CBE that were developed through teacher education were put into use in vocational educational programs in US higher education during the 1970s (Tuxworth, 1994), when large numbers of adults were returning to college. The federal government's Fund for the Improvement of Postsecondary Education provided grant support for the development of competency-based approaches in serving these students, beginning a trend that can be characterized as the second phase of competency-based approaches in higher education. Institutions operating these programs included Alverno College, DePaul University's School for New Learning, Empire State College, Excelsior College (formerly Regents College), and Thomas Edison State University (Klein-Collins, 2012). The programs linked educational

progress to student performance rather than seat time by emphasizing learning outcomes (which were typically embedded in the curriculum) and the assessment of those outcomes. The programs also allowed for the assessment of previous knowledge and skills, which led to advances in various forms of prior learning assessment (Ford, 2014; Klein-Collins, 2012).

Over the next decades, colleges and universities continued to develop competency-based programs, with many but not all targeting adult learners. In 2002, Jones and Voorhees described the range of these programs by providing case studies of eight. Some dated to the 1980s while one was as recent as 1999. Most were in postsecondary education but one was at Ford Motor Company. And some programs were in liberal arts colleges while others were focused on vocational training. A common element across the studies was the identification and assessment of student learning outcomes. The postsecondary programs included Colorado Community Colleges, Hagerstown Community College, King's College, Northwest Missouri State University, Sinclair Community College, and Western Governors University (WGU), all of which had identified learning outcomes as part of their curricula in specific disciplinary programs. Half of these institutions – King's College, Northwest Missouri State University, and WGU – had also developed end-of-program competencies as well, suggesting a more advanced competency-based model. A brief summary of the case studies for King's College and WGU reveals the range of approaches.

In the 1980s, faculty were dissatisfied with the college's vaguely defined general education curriculum and opted to identify student learning outcomes more clearly. Faculty at the college worked in teams to develop specific outcomes for each course, identify course content aligned with those outcomes, develop strategies for assessing the outcomes, and identify specific assessment criteria to be used. The courses were taught face-to-face, the assessments were developed by faculty themselves, and credits were awarded based on completion of courses in standard semester timeframes. Jones and Voorhees found that the process of developing outcomes facilitated faculty understanding and agreement as to their objectives for student learning (Jones & Voorhees, 2002, pp. 59–72).

Curriculum is the vehicle through which a country empowers its citizens with the necessary knowledge, skills, attitudes, and values that enable them to be socially and economically engaged and empowered, for personal and national development. In February 2020, Uganda implemented a new direction in the educational system. It has rolled out of the ordinary old curriculum which emphasized knowledge acquisition from a theoretical approach. The learning process was known as teacher-centered. However, the revised curriculum would meet the learners' needs and aspirations, skills acquisition, training, and personal and professional development of learners. In addition, the new curriculum will help learners develop critical thinking ability, creativity and collaboration, and the spirit of teamwork and communication skills, among many skills (National Curriculum Development Centre, 2020).

In 2018 the process of evaluating approaches to assessment and reviewing the Lower Secondary Curriculum with the National Curriculum Development Centre in Uganda (NCDC) was begun. The revised Syllabi and Assessment Guidelines was agreed and adopted by the Minister of Education in January 2019.

The Lower Secondary Curriculum review in Uganda resulted in a new curriculum that is based on clear values and principles and which includes a set of subject syllabuses and also a set of 'generic skills' and some 'cross-cutting issues'. There is a shift from Learning Outcomes that focus mainly on knowledge to those that focus on skills and deeper understanding.

The review focused on: producing a secondary school graduate who has the competences that are required in the 21st century; promoting values and attitudes; effective learning and acquisition of skills in order to reduce unemployment among school graduates. The review also aimed at reducing the content overload and contact hours in the classroom so as to create time for research, project work; talent development and creativity; allowing for emerging fields of knowledge across all subjects and doing away with obsolete information. There was need to address the social and economic needs of the country like the mining sector, tourism, services provision, science and technology development and to ensure rigorous career guidance programme to expose learners to the related subjects. This will enable learners to make informed choices as they transit and to equip them with knowledge and skills that will enhance their competitiveness in the global value chain. The curriculum emphasises understanding, application

and behavioural change. It is based on a clear set of values which will be imparted to learners during the learning process. At the heart of every subject there are generic skills that allow development into life-long learners. Besides, there are also cross cutting issues that are embedded across subjects to enable learners understand the connections between the subjects and complexities of life (National Curriculum Development Centre, 2020; Kasule, 2015).

1.1.2 Theoretical perspective

The study was based on the theory of constructivism. Constructivism is the theory that says learners construct knowledge rather than just passively take in information. As people experience the world and reflect upon those experiences, they build their own representations and incorporate new information into their pre-existing knowledge (schemas).The theory of constructivist learning is vital to understanding how students learn. The idea that students actively construct knowledge is central to constructivism. Students add (or build) their new experiences on top of their current foundation of understanding. As stated by Woolfolk (1993) "learning is active mental work, not passive reception of teaching"

1.1.3 Conceptual perspective

Information and communication technologies (ICT) is defined as a diverse set of technological tools and resources used to transmit, store, create, share or exchange information. Information and Communication Technologies (ICTs) is a broader term for Information Technology (IT), which refers to all communication technologies, including the internet, wireless networks, cell phones, computers, software, middleware, video-conferencing, social networking, and other media applications and services enabling users to access, retrieve, store, transmit, and manipulate information in a digital form. ICTs are also used to refer to the convergence of media technology such as audio-visual and telephone networks with computer networks, by means of a unified system of cabling (including signal distribution and management) or link system. However, there is no universally accepted definition of ICTs considering that the concepts, methods and tools involved in ICTs are steadily evolving on an almost daily basis.

In this study, ICT use was measured in terms of ICT facilities availability at school, teacher capacity to use ICT, teachers' attitude towards ICT use, as well as the students' attitude and capacity to use ICT.

The competence-based curriculum (CBC) refers to the intended and systematic learning experiences through which students acquire and/or develop their knowledge, skills and attitudes that are components of the learner's competencies. It refers to the planned pathways of learning that respond to the learner's needs and cater for their development, while also observing societal needs and prospects. It focuses on enabling learners to graduate with the skills and competencies needed in today's society. Furthermore, the CBC targeted aiding in the achievement of Sustainable Development Goal number four: ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. A competency is the ability to apply learning resources and outcomes (knowledge, skills, values, and attitudes) adequately in a defined context (education, work, personal, or professional development). A competency-based curriculum is a curriculum that emphasizes what learners are expected to do rather than mainly focusing on what they are expected to know. In principle, such a curriculum is learner-centered and adaptive to the changing needs of students, teachers, and society. It implies that learners can acquire and apply the knowledge, skills, values, and attitudes to solve situations they encounter in everyday life. Numerous countries are currently developing or revising their curriculum in light of the global trend emphasizing on 21stcentury competencies. The core competencies are Communication and collaboration; Critical thinking and problem solving; Creativity and innovation/ imagination; Citizenship; Digital literacy; as well as Learning to learn (Malunda, 2018).

Adoption of the appropriate pedagogy, subjects, learning areas, curriculum designs, schemes of work, textbooks, lesson plans, and other teaching-learning materials will be the vehicles through which the core competencies will be developed and experienced by the learners. The approach will make learning meaningful and provide opportunities to apply the competencies to real life situations, while also empowering them with skills for lifelong learning.

1.1.4 Contextual Perspective

The government rolled out the new lower secondary education curriculum in February 2020 with the aim of creating meeting the learners' needs especially in regard to skills training and enhancement. The Minister for Education, Hon. Janet Museveni, in her statement to Parliament, said that the need to review the curriculum was overdue since it had not been revisited since the colonial education system was introduced. The Minister revealed that the old curriculum was channeling out graduates with no practical skills to meet the demands in the labour market.

The National Curriculum Development Centre has made adjustments in the teaching subjects for the lower secondary, for example, teaching subjects have been reduced from 43 to 21. In the new approved curriculum, schools will teach 12 subjects at Senior One and Two, out of which 11 will be compulsory while one will be from an elective menu (optional). Students at levels Three and Four will exit with a minimum of eight or a maximum of nine subjects with seven of them compulsory.

Consequently, some subjects have taken different forms: Music has now included dance and drama to become Performing Arts; Fine Art has been redesigned to include elements of design and it is now called Art and Design; Technical Drawing has been integrated with elements of woodwork and metalwork and technology and it is now called Technology and Design; History has been integrated with Political Education; Accounts and Commerce have been integrated in Entrepreneurship education, and History has been integrated with Political Education.

Under the new curriculum, teachers will compile the learners' achievements under the Formative Assessment in the four-year cycle, find an average score and submit it to the Uganda National Examinations Board to contribute at least 20 per cent in the final national examinations grading. The Chinese language has been added to the menu of foreign languages while Kiswahili, Physical Education and entrepreneurship will be compulsory for all students in Senior One and Two.

The world around us is changing and we must prepare our children to face the new challenges in the 21st Century. They need to acquire new skills and knowledge of the latest technologies. The school curriculum must reflect these changes, and thus, prepares our children for the challenges

ahead. This new curriculum is necessary for providing high quality education for all, as a human right; developing integrated, balanced, flexible and advanced curricula that deepen the learner's skills and attitudes towards respecting human rights; addressing both the learner needs and the requirements of national development plans, including the present and future needs of the labor market; addressing changes/new developments at the local and international levels through up-to-date and culturally-appropriate curricula; building enlightened citizenship based on the principles and practices of democracy, freedom and social justice; developing creative and critical thinking, problem solving skills, pro-active attitudes and learning to learn skills from a life-long learning perspective. The objective of competency-based education is to prepare individuals for the challenges of the future; empower students with knowledge and skills in various fields of study in a flexible educational program tailored to each student (Kasule, 2015)..

Teachers implementing the competency based curriculum are responsible for designing learning tasks. However, it is important for curriculum designers to support these teachers in their struggle to do so. Most teachers do not know what to do in designing instructional tasks and quality learning materials since they are graduates of the knowledge based curriculum. At the same time these tasks cannot be left for curriculum designers and experts because it would inhibit the teachers‟ role and ingenuity in the competency based education (Kasule, 2015).Therefore, it is important that teachers are thoroughly trained to take up their role and be supported to master the methodology, formulating appropriate instructional designs and tasks. With classroom time reduced to five hours contact hours and after 2:50 p.m., is slotted as time for learners to engage in research, project work, clubs and games and sports. Many stakeholders have come up to ask different questions on whether this skill development will be essential with inadequate materials in the Ugandan education sector to support the skill development. Most schools do not have enough computers for learners to acquire skills in information communication technology (ICT). Again, issues on infrastructures like laboratories or even materials to carry out practicals on Nutrition and Food, and technology as integrated subjects in the new curriculum are questioned. This has left several schools in a dilemma on how to implement the new curriculum with few teachers, and not knowing how to deal with the problem.

Teachers find challenges in assessing the acquisition of generic skills. The new curriculum is based around a set of five Generic Skills. The very nature of "Generic Skills" means that they apply across the subjects. They are not found in one subject only. In the very nature of skills, they have to be acquired and deployed in a context. The subjects provide these contexts. They can therefore be assessed within the context of what is being taught; for example, was the learner able to "plan and carry out an investigation" in Science or "Write and present coherently" in Social Studies. Because the Generic Skills have already been built into the subject syllabuses, there is no need to assess them separately. They are already covered by the subject "Learning Outcomes". Because of this, the implementation of this new curriculum seems problematic.

In doing all this, ICT is necessary to empower learners with a package of skills through the use of various ICT tools namely computers, the internet, broadcasting technologies (radio and television), banking technologies and telephony to access, manipulate and provide information. The internet opens up the individual to the world of communication, research and innovation, graphic and multimedia manipulation, and the advanced skills of spatial data analysis and manipulation through Geographical Information Systems (GIS). In order for the learners to do research, internet and mobile phones are required; unfortunately, some schools do not have them.

1.1 Statement of the problem

In the year 2020, the Ministry of Education and Sports rolled out a new curriculum for secondary schools (NCDC), starting with S.1. In the new curriculum, schools are supposed to teach 12 subjects at Senior One and Two, out of which 11 are compulsory while one subject is an elective (optional). Students at levels Three and Four will exit with a minimum of eight or a maximum of nine subjects with seven of them compulsory. The new pedagogy aims at providing to the learners 21st Century skills which include; critical thinking, creativity, collaboration or teamwork, communication, information literacy, ICT, and flexibility. The reformed, outcomes-based, learning requires a revised, skill -oriented approach to assessment that is support learning and reward achievement at all levels. The assessment chosen was criterion-referenced to ensure that standards can be maintained year by year. The new approach to assessment will support the changed emphasis in the nature of learning and teaching under the new curriculum by: Assessing the learners' understanding, not just their knowledge, of key concepts in each subject; Focusing on the learner's ability to apply their knowledge in a range of situations; Enabling the learner to

demonstrate a selection of relevant generic skills; as well as using a diversified range of assessment techniques like oral, written, performance, practical skills demonstrations (Nassolo, 2022).

The new pedagogy aims at providing to the learners 21st Century skills which include; critical thinking, creativity, collaboration or teamwork, communication, information literacy, ICT, and flexibility. This is obviously good news to the nation, however, the perturbing question is whether this curriculum will be implemented amidst the ICT inadequacies in most of the Ugandan schools. For the learners to become creative especially in ICT and the natural sciences there must be necessary equipment such as well-furnished laboratories, effective internet and obviously knowledgeable trainers. These are not present in most of the rural schools in Uganda which are predominantly knowledge hubs for most of the young people. some teachers have not received training while others are worried of losing their jobs since subjects and teaching load have been reduced drastically(Nakabugo, Bisaso, &Masembe, 2011). Use of Information and Communication Technology in the implementation of the new curriculum seems to be a challenge in rural schools. The current study addressed this.

1.2 Purpose of the study

The purpose of this study was to find out the extent of ICT facilities availability, teachers and students' capacity in using ICT, as well as their attitude towards ICT in the Competency-based curriculum implementation in Uganda lower private secondary schools, Nakasongola district.

1.3 Research objectives.

Specifically, this study sought to:

i. Find out the availability of ICT facilities in lower private secondary schools of Nakasongola district, Uganda.
ii. Investigate teachers' capacity to use ICT in the competency-based learning in lower private secondary schools of Nakasongola district, Uganda.
iii. Find out the perception of teachers towards using ICT in the competency-based learning in lower private secondary schools of Nakasongola district, Uganda.
iv. To find out the students' attitude and capacity to use ICT in the competency-based learning in lower private secondary schools of Nakasongola district, Uganda.

1.4 Research questions

This study was guided by the following research questions:

i. To what extent are ICT facilities available in lower private secondary schools of Nakasongola district, Uganda?
ii. To what extent are teachers capable of integrating ICT in the competency-based learning in lower private secondary schools of Nakasongola district, Uganda?
iii. What is the perception of teachers towards using ICT in the implementation of a competency-based learning in lower private secondary schools of Nakasongola district, Uganda?
iv. What is the students' attitude and capacity to use ICT in the competency-based learning in lower private secondary schools of Nakasongola district, Uganda?

1.5 Scope of the Study

1.5.1 Geographical Scope

The geography of the study is Nakasongola district. Nakasongola District was created in 1997. Prior to that it was part of Luweero District. Nakasongola is a district in Uganda. It has nine subcounties, 45 parishes and 382 villages. The sub counties are: Kakooge, Kalongo, Kalungi , Lwabyata, Lwampanga, Nabiswera , Nakasongola Town council, Nakitoma and Wabinyonyi. By 2022, there were 22 secondary schools in the district. Some of the schools in the district are Ekitangaala Transformation High School; Bethel Royal High School, Nakasongola secondary school, Kiyingi Memorial Secondary school, Kakooge Secondary school, Nakasongola Army secondary School, Kalongo Seed Secondary school, Nakasongola Muislim Secondary school among others

Nakasongola District is dominated by indigenous Bantu known as Buruuli. They speak Ruruuli whose dialect is similar to that of Runyoro, Runyara, Lugwere and Lukenyi. Baruuli live harmoniously with other tribes including Hima, Nyarwanda, Karamajong, Ganda, Luo, Banyoro, Bakenyi to mention but a few.

1.5.2 Content Scope

The content scope for the extent to which ICT is used in the competence-based learning in Nakasongola district lower secondary schools, with specific reference to teachers' capacity to use ICT, ICT facilities availability in the schools, as well as the attitude of students and teachers towards using ICT in the competency-based learning in private secondary schools.

1.5.3 Time Scope

This study was conducted in a period of 5 months that is because the process involved data gathering, analysis and compiling while the data needed did not exceed one year.

1.6 Significance of the study.

The result of this study might help to provide evidence for teachers to incorporate learner-centered approaches in teaching and learning in order to improve the standard of learning in the schools in future

The results from this study might be used to change in future children's attitude towards the new curriculum so that those whose attitude might be negative can be made positive. The government through ministry of education and sports cannot bring something which is disastrous to its citizens.

The study findings might in the future help the government (ministry of education and sports) of Uganda to improve on the provision of learning aids not only for English but other subjects as well.

The results from this study might provide more knowledge in future about the new learning (CBE) the government (MOES) introduced in lower secondary schools in January 2020.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter presents literature on explores the concept of learning aids in relation to English achievement in vocabulary, spelling, writing and reading.

2.1 Theoretical Review

Constructivism **is a** learning theory that teachers use to help their learners understand. Constructivism is founded on the notion that individuals actively **establish** their understanding through experiences, rather than just **passively** accepting information. As individuals **experience** the world and **reflect** upon their experiences, they **build on** their learning and add new details into their pre-existing knowledge. Constructivist classrooms focus on student questions and interests, they build on what students already know, they focus on interactive learning and are student-centered, teachers have a dialogue with students to help them construct their own knowledge, they root in negotiation, and students work primarily in groups. The theory of constructivism has many elements. These principles outline the theory as a whole and how they affect the learning of the students. The main points are listed below:

1. Knowledge is constructed. Every student begins the learning journey with some preexisting knowledge and then continues to build their understanding on top of that. They will select which pieces of the experience to add, making everyone's knowledge unique.
2. Learning is a social activity. Interacting with others is vital to constructing knowledge. Group work, discussions, conversations, and interactions are all important to creating understanding. When we reflect on our past experiences, we can see how our relationship with others is directly connected to the information learned.
3. Learning is an active process. Students must actively engage in discussions and activities in order to construct knowledge. It is not possible for students to take on a passive role and retain information. In order to build meaningful ideas, there must be a sensory response.
4. Learning is contextual. Isolation is not the best way to retain information. We learn by forging connections between what we believe and the information we have already.

Learning also occurs in the situation within the context of our lives, or alongside the rest of our understanding. We reflect on our lives and classify the new information as it fits into our current perspective.

5. People learn to learn, as they learn. As each student moves through the learning journey, they get better at selecting and organizing information. They are able to better classify ideas and create more meaningful systems of thought. They also begin to recognize that they are learning multiple ideas simultaneously, for example, if they are writing an essay on historical events, they are also learning elements of written grammar. If they are learning about important dates, they are also learning how to chronologically organize important information.
6. Learning exists in the mind. Hands-on activities and physical experience are not enough to retain knowledge. Active engagement and reflection are critical to the learning journey. In order to develop a thorough understanding, students must experience activities mentally as well.
7. Knowledge is personal. Because every person's perspective is unique, so will be the knowledge gained. Every individual comes into the learning activity with their own experiences and will take away different things as well. The theory of constructivist learning is based entirely around each individual's own perspective and experiences.
8. Motivation is key to learning. Similar to active participation, motivation is key to making connections and creating understanding. Students cannot learn if they are unwilling to reflect on preexisting knowledge and activate their thought process. It is crucial that educators work to motivate their students to engage in the learning journey.

Educators must also know how to implement it in their classrooms. Their goal is to create a welcoming environment that promotes active engagement in learning. In the theory of constructivist learning, instructors act as facilitators. They must promote collaboration and adjust their lessons based on the prior level of understanding of the class. Once they identify students' existing knowledge, instructors must work to grow the understanding in those areas.

There are four key areas that are crucial to the success of a constructivist classroom:

1. The instructor takes on the role of a facilitator instead of a director.
2. There are equal authority and responsibility between the students and the instructor.
3. Learning occurs in small groups.
4. Knowledge is shared between both the students and the instructor.

These four areas must be addressed in order for the constructivist classroom to be successful. As you can see, it differs greatly from the traditional classroom. Constructivist classrooms are more student-centered and the learning revolves around their interests and questions. Teachers guide learning by implementing group activities, creating collaborative dialogue, and facilitating interactive experiences. Students build on their prior knowledge and construct new understanding based on the lessons taught. Dialogue and negotiation are also key components to successful learning.

When implementing the constructivist theory in the classroom, lessons must include the following components:

1. Eliciting prior knowledge. As new understanding is constructed on preexisting knowledge, the instructor must first activate prior knowledge. This can be done with collaborative activities, relaxed discussions, or pre-tests.
2. Creating cognitive dissonance. Knowledge is built when new ideas are presented and activities are just challenging enough for students. "Just right problems" force students to reevaluate the schemas in their mind and organize new solutions.
3. Applying knowledge with feedback. The instructor's role is to encourage students and provide feedback. This may be seen in the form of quizzes, presentations, or discussions in the classroom. The goal of applying feedback should be to encourage even more growth and challenge knowledge of the new situation.
4. Reflecting on learning. Students should be offered the opportunity to reflect on their understanding and demonstrate their learning. This could be in the form of an essay, a presentation, or even the responsibility of sharing their knowledge with another student.

Examples of constructivist classroom activities include:

1. Reciprocal teaching/learning: a group of 2 or more students work together and teach one another.
2. Inquiry-based learning: students create their own questions and seek to solve them through research and observations. After underlining the arguments for their response, they make connections between their prior knowledge and the information discovered through their research. Students conclude by identifying possible gaps and developing further questions for the next project.
3. Problem-based learning: similar to inquiry-based learning, except focuses on problems in the real world. Students work in groups to research possible solutions and gain valuable skills by working together. Seeking evidence, making connections, and drawing conclusions as a team help students develop communication and collaborative skills while solving real-world issues.
4. Cooperative learning: small group activity with one key difference – interdependence. While most constructivist activities rely on group learning, cooperative activities are where group members are dependent on others to achieve solutions. There is no division of tasks in cooperative learning; instead, group members rely on the knowledge of others to further their own understanding.
5. Other examples are asking students to reflect on their experience, helping students find new solutions to problems, encouraging discussions about what is being taught, helping students explore and understand how ideas are connected, and asking students to justify and explain their thinking.

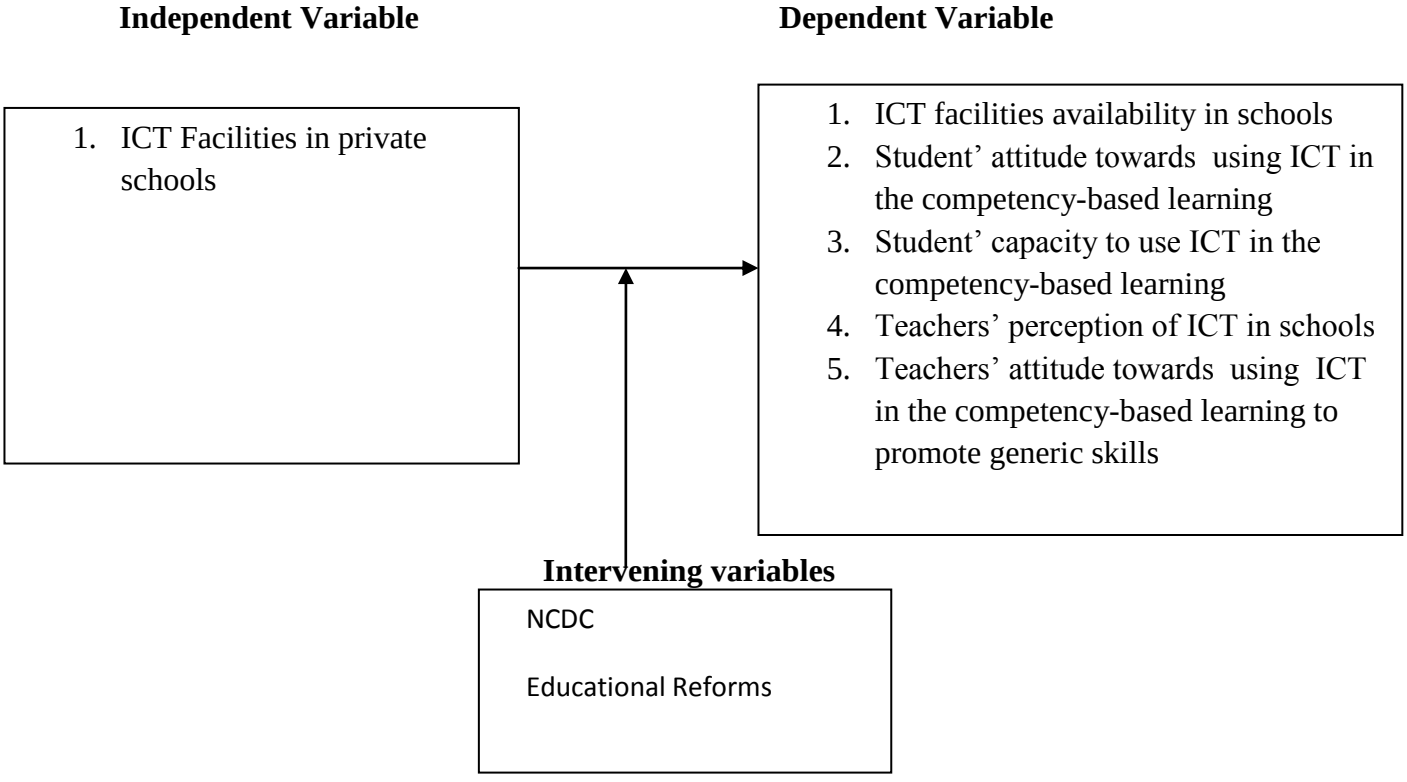
The guiding principles of constructivist thinking that we must keep in mind when we consider our role as educators are predicated on the belief that learning consists of individuals' constructed meanings and then indicate how they influence museum education. Therefore, Learning is an active process in which the learner uses sensory input and constructs meaning out of it. The more traditional formulation of this idea involves the terminology of the active learner (Dewey's term) stressing that the learner needs to do something; that learning is not the passive acceptance of knowledge which exists "out there" but that learning involves the learners engaging with the world; 2. People learn to learn as they learn: learning consists both of constructing meaning and

constructing systems of meaning. For example, if we learn the chronology of dates of a series of historical events, we are simultaneously learning the meaning of a chronology. Each meaning we construct makes us better able to give meaning to other sensations which can fit a similar pattern; 3. The crucial action of constructing meaning is mental: it happens in the mind. Physical actions, hands-on experience may be necessary for learning, especially for children, but it is not sufficient; we need to provide activities which engage the mind as well as the hands· (Dewey called this reflective activity.); 4.Learning involves language: the language we use influences learning. On the empirical level. Researchers have noted that people talk to themselves as they learn. On a more general level. there is a collection of arguments, presented most forcefully by Vigotsky, that language and learning are inextricably intertwined. This point was clearly emphasized in Elaine Gurain's reference to the need to honor native language in developing North American exhibits. The desire to have material and programs in their own language was an important request by many members of various Native American communities; 5. Learning is a social activity: our learning is intimately associated with our connection with other human beings, our teachers, our peers, our family as well as casual acquaintances, including the people before us or next to us at the exhibit. We are more likely to be successful in our efforts to educate if we recognize this principle rather than try to avoid it. Much of traditional education, as Dewey pointed out, is directed towards isolating the learner from all social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned. In contrast, progressive education (to continue to use Dewey's formulation) recognizes the social aspect of learning and uses conversation, interaction with others, and the application of knowledge as an integral aspect of learning; 6. Learning is contextual: we do not learn isolated facts and theories in some abstract ethereal land of the mind separate from the rest of our lives: we learn in relationship to what else we know, what we believe, our prejudices and our fears. On reflection, it becomes clear that this point is actually a corollary of the idea that learning is active and social. We cannot divorce our learning from our lives; 7. One needs knowledge to learn: it is not possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. The more we know, the more we can learn. Therefore any effort to teach must be connected to the state of the learner must provide a path into the subject for the learner based on that learner's previous knowledge; 8. It takes time to learn: learning is not instantaneous. For significant learning we need to revisit ideas, ponder them

try them out, play with them and use them. This cannot happen in the 5-10 minutes usually spent in a gallery (and certainly not in the few seconds usually spent contemplating a single museum object.) If you reflect on anything you have learned, you soon realize that it is the product of repeated exposure and thought. Even, or especially, moments of profound insight, can be traced back to longer periods of preparation; and 9. Motivation is a key component in learning. Not only is it the case that motivation helps learning, it is essential for learning. This ideas of motivation as described here is broadly conceived to include an understanding of ways in which the knowledge can be used. Unless we know "the reasons why", we may not be very involved in using the knowledge that may be instilled in us.

2.2 Conceptual framework

Figure 2.2: Conceptual framework showing ICT Use in the Competency-based Curriculum (DV)



Source: Developed based on the National Curriculum Development Centre (2020): New curriculum for lower secondary schools in Uganda.

The conceptual framework shows that the ICT-related factors, such as ICT Facilities in schools, Teacher capacity to use ICT, Teachers' attitude towards integrating ICT in the competency-based learning to promote generic skills, Student' attitude towards integrating ICT in the competency-based learning, as well as Student' capacity to use ICT in the competency-based learning can affect the implementation of the competence based learning in schools.

In the new curriculum, students are usually required to do projects and research and all this or much of it requires ICT. The internet is a necessity in the implementation of the competency-based curriculum. Internet can be accessed through smart phones, laptops, computers etcetera. Do schools, teachers and students in some rural districts like Nakasongola have these gadgets? Do they have the money and will to buy data for these services? Do schools have the money and will to pay for these services and to maintain them? This can affect the success of the newly introduced competency-based curriculum in schools.

2.3 Related Literature

2.3.1 General view on ICT in the competence-based learning

ICT contributes to a learner's development of critical thinking, research and problem solving, creativity and innovation, communication and cooperation skills. This can be achieved by conceptualising, analysing, synthesising, evaluating, manipulating and applying the role of various computing tools to appropriate contexts of real life, as well as analysing both hardware and software mechanisms. Learners can be able to use ICT safely, securely and ethically, to manage computing tools, and to organise and present information using word processing, spreadsheets, presentations, Geographical Information Systems, graphics and multimedia and application software. Through ICT, learners can identify problems in information processing and conduct analysis by considering relevant functional, practical, human and socioeconomic factors. They can also draw up specifications for the ICT enabled solutions to problems. Learners can also draw on a range of resources which are most suitable for solving problems and developing solutions and use appropriate methods to implement these solutions using equipment, tools and techniques sensibly. They will test, evaluate and refine solutions systematically, document solutions to problems, and appropriately apply ICTs to solve problems.

Competency-based learning or competency-based education is a framework for teaching and assessment of learning. It is also described as a type of education based on predetermined "competencies," which focuses on outcomes and real-world performance. Competency-based learning is sometimes presented as an alternative to traditional methods of assessment in education. In a competency-based education framework, students demonstrate their learned knowledge and skills in order to achieve specific predetermined "competencies. The set of competencies for a specific course or at a specific educational institution is sometimes referred to as the competency architecture. Students are generally assessed in various competencies at various points during a course, and usually have the opportunity to attempt a given competency multiple times and receive continuous feedback from instructors. Key concepts that make up the competency-based education framework include demonstrated mastery of a competency, meaningful types of assessment, individualized support for students, and the creation and application of knowledge (Nassolo, 2022).

In a competency-based learning model, the instructor is required to identify specific learning outcomes in terms of behavior and performance, including the appropriate criterion level to be used in evaluating achievement. Experiential learning is also an underpinning concept; competency-based learning is learner focused and often learner-directed. The methodology of competency-based learning recognizes that learners tend to find some individual skills or competencies more difficult than others. For this reason, the learning process generally allows different students to move at varying paces within a course. Additionally, where many traditional learning methods use summative testing, competency-based learning focuses on student mastery of individual learning outcomes. Students and instructors can dynamically revise instruction strategies and based on student performance in specific competencies (Kasule, 2015).

What it means to have mastered a competency depends on the subject matter and instructor criteria. In abstract learning, such as algebra, the learner may only have to demonstrate that they can identify an appropriate formula with some degree of reliability; in a subject matter that could affect safety, such as operating a vehicle, an instructor may require a more thorough demonstration of mastery. Competency-based learning or education (CBE) is not a new trend, but has received much attention over the past few years as more institutions develop programs. Like MOOCs, CBE has gained popularity with learners due to its flexible structure and

affordability. As the name suggests, these programs are based on the development of competencies applicable to a particular career.

What is unique about CBE is that it focuses on what students learn and not on the time spent in the classroom completing credits. In this approach, students work at their own pace to demonstrate mastery in the competencies necessary for their chosen field of study. Check out this useful infographic from Rasmussen College that explains CBE and the differences between it and traditional education. This leads to the focus of this article where we will examine the key benefits of CBE for students including flexibility, engagement, and affordability.

1. **Flexible:** Competency based programs are very flexible as their structure depends on the individual learner. There is no rigid schedule in these programs, no set semesters and no classes. Instead, students guide their learning and control when and where they complete projects and assessments. CBE is also flexible in that it allows students to enter a program at any level where they are given credit for previous experience.
2. **Self-paced:** The focus of CBE is on the final outcome and not the journey. This enables students to control their pacing because they are not confined by a set learning process. As soon as a student feels they can prove mastery, they can take an assessment, receive credit and start on the next material. Moving as slow or fast as they wish, students are able to complete a degree when they are ready. This is a huge benefit for independent and adult learners who may be working towards a degree around other schedules.
3. **Engaging:** One of the strongest outcomes of competency based education is increased student engagement. Students are more engaged in the material because they have ownership over their learning. They are empowered because they have control over when, where and how they learn. CBE also promotes individualized learning and accommodates a variety of learning styles, making it a truly personalized experience. This experience increases engagement because content is tailored to each student and more relevant.
4. **Affordable:** The cost of competency based programs varies by institution, program and student pace. Many institutions have created CBE programs precisely as a strategy to increase learning and to lower the cost of education. In many institutions, the tuition depends on how long it takes a student to complete a degree. The faster a learner

progresses through the material, the less expensive the program is. Since many CBE programs are offered online and leverage technology, operating costs are eliminated resulting in lower tuition fees.

5. **Skills-based:** One of the key benefits of CBE is that learning centers on real-world skills and competency development. Programs are designed around competencies that are needed for a particular career ensuring that the material is relevant. The outcome is that students are workplace ready and have expertise in their chosen fields. For many students, CBE is a direct path to a successful career. Employees also value CBE and according to a recent article on Western Governors University's (WGU) competency program graduates "98 percent of employers with WGU graduates would hire more of our students" (JCU online).

Steps to develop a competency-based curriculum

Designing various components of competency-based curriculum is largely about creating varied opportunities for students that allow them to demonstrate important skills in authentic contexts.

The process of competency-based curriculum design typically involves the following steps –

1. Development or identification of general competencies

The first step in developing this kind of curriculum is to identify and map the general competency areas using a wide range of sources of information and techniques to collect them. These competencies offer a framework based on specific performance outcomes to develop a curriculum and measure performance.

The sources you can use include subject matter experts, high-performing students, educators, online textbooks, articles, and other resources. The techniques that you can use include focus groups, surveys, readings, and observations.

Although each student has their own unique set of competencies, in general, these competency maps are created by observing and interviewing top-performing students so that their performance can be captured as a list of core competencies (knowledge and abilities).

2. Organizing competencies into specific themes

In the next step, you have to define specific competencies in each general area. Developing an accurate and precise description will make the next steps much easier in the process of curriculum development.

To be able to fully define a competency, reflect thoroughly on its composing elements. For instance, for public speaking, consider both delivery (body language, voice) and content (language, persuasion, organization).

At this point, also consider the following questions to help you frame your goals around a competency-based curriculum: What are the broad advantages of competency-based learning and why are these important?; What are the specific benefits it can offer your institution?; What are some of the unique goals of your institution around this?; How will you measure the success of this initiative for your institution?; What is the content required to support the development of the specific competency in the curriculum?; What are the instructional strategies and methods that are most effective in developing the competency?

3. Establishing criteria for performance

For each of the competencies, create the standards or rubrics by which you can measure the competence. Make sure to describe several levels that define positive and negative competence at this step. This will help you gauge the effectiveness of the curriculum and find out what works well and what doesn't for the learners.

4. Creating learning experiences

Once you have defined competencies and criteria for outcomes, think about how students will demonstrate these skills via learning experiences. There are multiple ways to demonstrate these skills, so make sure that the products of the assessment – the students' work – are varied and interesting.

The ideal way to recognize a competency-based learning experience is to thoroughly look at the work the students produce and the learning environment in which they produce it. For instance,

teachers and students use the identified competencies and outcomes to engage in regular, open reflection on learning.

The idea here is to empower students to be real learning designers. Allow them to use the rubric to design a learning experience where they can demonstrate the learning outcomes and give them the responsibility of the planning, execution, and presentation of their work for assessment.

5. Assessing competency

A successful competency-based curriculum will enable students to apply and execute knowledge, skills, and abilities desired by the industry in general.

To bridge this gap between industry and academia, there is a need for a structured process of connecting KSAs to assessment. When assessing competencies, you need to address two important questions including: Have the students acquired the specified competencies by the end of the program?;If yes, was this acquisition of the competencies a result of the program?

You need a variety of assessment methods here for assessing the program-level competencies including formative and summative assessments as well as self-assessment.

6. Evaluating the effectiveness of the curriculum

As the curriculum gets implemented and students begin to develop their competence in various areas, there will be a lot of likely changes.

It is, therefore, important to evaluate the curriculum's efficacy to deliver competence, refine it to better meet the desired goals, and then repeat the process to ensure ongoing effectiveness.

The literature on each research objective is presented as follows.

2.3.2 ICT facilities availability in schools

The core factors that influence the adoption and diffusion of ICTs in education have been identified in many studies and project reports such as the UNESCO Meta-survey on the Use of Technologies in Asia and the Pacific20 and, in the context of East Africa, by IDRC in its

thorough analysis of ICT policy-making in the region. Two other studies that have discussed some of these factors in the higher education sector are those carried out by the United Nations National University and by the African Virtual University. What emerges from these analyses is that the factors are essentially the same in both developed and developing economies, although they differ in terms of importance depending on which side of the "digital divide" they are viewed from. What differentiates the rate of adoption and diffusion is not a difference in the factors at play, but rather the degree to which they have been developed or are present in a given country.

Stakeholders have mixed feelings about the new curriculum. The reformed, outcomes-based, curriculum requires a revised, skill -oriented approach to assessment that will support learning and reward achievement at all levels. This will be criterion-referenced to ensure that standards can be maintained year by year. The new approach to assessment will support the changed emphasis in the nature of learning and teaching under the new curriculum by: Assessing the learners' understanding, not just their knowledge, of key concepts in each subject; Focusing on the learner's ability to apply their knowledge in a range of situations; Enabling the learner to demonstrate a selection of relevant generic skills; Using a diversified range of assessment techniques like oral, written, performance, practical skills demonstrations; Encouraging the development of learners' abilities to reflect on their own learning and carry out self-assessment.

Knowledge can be fairly easily assessed through written tests, but the assessment of skills and deeper understanding is more difficult and often requires different approaches. Because of this, the role of the teacher in assessment becomes much more important. The teacher's role is not to write tests for learners, but to make professional judgments about learners' learning in the course of the normal teaching and learning process. Some perceive this as being complicated, hence developing a negative attitude towards the curriculum (National Curriculum Development Centre, 2020).

Competence-based curriculum requires self-learning by students. This at times brings in an element of self-efficacy. Self-learning actions are also influenced by self-efficacy. Bandura (1997) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments. Self-efficacy beliefs refer to people's beliefs

about their capabilities to successfully execute a particular course of action. Van Dinther, Dochy, and Segers (2011) indicated that self-efficacy specifies tasks and activities in which people feel efficacious rather than a general self-judgment. Self-efficacy involves a specific level of self-confidence to accomplish a task. Wood and Bandura (1989) showed that the stronger a person's perceived self-efficacy is, the higher the goals he or she may set and the stronger his or her devotion would be to them. Zimmerman (2000) demonstrated that a student's self-efficacy plays a causal role in student development and the use of academic competencies. Yusuf (2011) also demonstrated the direct effects of self-efficacy on self-learning strategies and achievement motivation. Reasonably, the self-efficacy of teacher education students plays a crucial role in influencing their self-learning actions. Self-concept and self-efficacy are distinguishable constructs (Jansen, Scherer, &Schroeders, 2015). Self-efficacy primarily refers to the self-judgment of context-specific abilities, whereas self-concept mainly depends on aggregated and global perceptions (Bandura, 1997; Bong &Skaalvik, 2003). Additionally, self-concept is a positive predictor for affective-motivational variables, whereas self-efficacy is a predictor for academic achievement or ability (Jansen et al., 2015). Ferla, Valcke, and Cai (2009) showed that students' self-concept strongly influences their self-efficacy.

2.3.1.1 Teachers' capacity of integrating ICT in the competency-based Curriculum

Researchers have identified administrative and professional support as being necessary for teacher success and the implementation of new initiatives (Bakir, Devers, & Hug; 2016; Bautista, Ng, Múñez, & Bull, 2016). Areas of support fall into different categories, but administrative influence, related administrative roles, and professional development opportunities are prioritized within the literature, thus supporting the need to highlight these areas for the successful implementation of a new curriculum (Cetin, 2016).

Recent studies have shown that administrative support and professional development opportunities influence whether or not teachers feel supported and comfortable with new curricular implementations (Bakir et al., 2016). In accordance with the CBAM, the difficulty surrounding a new change or innovation potentially increases concerns and fears among staff members. An effective curricular implementation will also rely on the attitudes of the

administration and teachers (Thorn & Brasche, 2015). One method that has been distinguished through the CBAM literature includes the need for administrative and professional support (Hall,

2015). Support is available through different forms of professional development and professional learning communities (PLCs), which are designed to address any concerns that might hinder the successful implementation of a change but these factors are highly dependent on the influence and roles of the administrators (Hall, 2015).

Without doubt, the most important person in the practice curriculum is the teacher. With their knowledge , experience and competencies teachers are central to any curriculum improvement effort, they are responsible for introducing the curriculum in the classroom and outside the classroom as well. With their knowledge, experiences and competencies, teachers are central to any curriculum development effort. Better teachers support better learning because they are most knowledgeable about the practice of teaching and are responsible for introducing the curriculum in the classroom. If another party has already developed the curriculum, the teachers have to make an effort to know and understand it. So, teachers should be involved in curriculum development. For example, teacher's opinions and ideas should be incorporated into the curriculum for development. On the other hand, the curriculum development team has to consider the teacher as part of the environment that affects curriculum (Carl, 2009). Hence, teacher involvement is important for successful and meaningful curriculum development. Teachers being the implementers are part of the last stage of the curriculum development process. The change to a competence-based curriculum is about transforming learning, and ensuring that learning is deep, enjoyable and habit-forming.

Prior research has shown that breakdowns in alignment often occur because of barriers caused by teachers (Early et al., 2014). Early et al. (2016) identified one hindrance to alignment from teachers who struggle with conflict during collaborative opportunities. The authors discovered that even though collaborative opportunities existed, skills for negotiating challenges or conflicts proved difficult for the participants. These findings provide two important points: (a) the concerns of teachers require evaluation before beginning collaborative co-teaching groups, and (b) this unpreparedness hinders alignment because of conflicting roles in student support. Causarano (2015) offered a different perspective on how teachers view curriculum alignment and

preventative barriers; he argues that teachers' self-reflective practices improve curriculum alignment and instruction. Other researchers, however, have found that curricular and instructional quality and teacher preparedness influence alignment (Early et al., 2014; Tweedie & Kim, 2015). The need for self-reflection determines what aspects of a literacy curriculum (for example) align accordingly in order to prepare teachers with the tools necessary for preparing students. Causarano (2015) highlighted the need for alignment as well as increased understanding into the requirements for teachers to effectively implement curricula and align instructional practices. The promotion of self-reflective practices, according to Causarano (2015), offered further insight into the barriers to the successful implementation of a new or revised curriculum. Causarano argued that because the effects of a lack of alignment will potentially harm students, teachers' abilities to reflect on their practices should be supported.

In contrast to the literature that Polikoff and Porter (2014) presented in their study on the connections between alignment and implementation, the authors (2014) found no evidence of an association between teacher effectiveness and instructional alignment. These findings later supported Causarano's study (2015). Polikoff and Porter (2014) explored the possible connections between instructional alignment, pedagogical quality, and student learning and state-mandated benchmarks but found no connection. This result created questions about how to effectively measure these categories and whether or not instructional alignment between standards and delivery of the curriculum are connected to pedagogical quality. Because no evidence supports a connection, the question also arises about how to effectively measure alignment as it is connected to the role of the teacher.

Teachers must shift from the traditional method of instruction and play the role of a facilitator. They must let learners experience ICT content through the use of available resources in order to value each learner's individual needs and expectations. The teacher must identify the needs of learners, the nature of the learning to be done, and the means to shape learning experiences accordingly. A teacher's role is to organise the learners in the classroom or computer laboratory and other ICTs to engage them in the use of these ICTs through participatory and interactive methods. This ensures that the learning is personalised, active, participative and cooperative.
The teacher will design and introduce the tasks to the class to perform or for immediate discussion. The role of the teacher is to guide the learners in constructing their own knowledge,

skills and attitudes. Learners are taught how to use the computer and other ICT tools used in different technologies. The teacher must select and develop appropriate materials like teaching models, digital content, and simulators for the learners to use in their work. In practical lessons, the teacher first demonstrates the handling of the computer and other ICT tools followed by learners embarking on the task with hands on manipulation. The teacher must devise remedial strategies in and outside the classroom/computer laboratory to ensure low achievers and those with learning difficulties keep pace with the rest in acquiring the required competencies.

The Benefits of using technology in the classroom are many for example it can enhance interaction and increase student engagement. Experts say that using technology in teaching and learning can increase children's engagement in class, more than an old school textbook can as devices and apps are where today's students live their lives. This is a benefit for all learners as apps cater to all levels of ability and use various teaching methods to support learning. Apps also help to give teachers new ways of teaching the same thing, from games to virtual field trips. In turn, these activities create an opportunity for more active participation in the learning process than through more traditional approaches. The National Math and Science Initiative found that the introduction of blended learning styles helps keep students focused for longer periods of time and can increase engagement, especially for STEM (Science, Technology, Engineering, and Math) subjects. In addition to this, mobile learning has more room for personalization than most paper or physical resources and therefore can be tailored to suit a particular child's needs. Learning is no more passive activity, it's active with applications. For example, like video games, level-based apps can foster a determination to get to the next level. Combining education with entertainment can cause students to forget they are doing school work and hence fail to concentrate. In addition, Mobile Apps Help in Systematic Learning. Classroom apps can be arranged in such a way that, it promotes not only a craving for learning as the child can track how far they've come and attempt to advance through the levels.

In 2013 a study by PBS Learning Media found that 74% of teachers were in agreement that technology enables them to solidify learning in their lessons. The Huffington Post also found that "78% of Kindergarten through Middle School teachers agree that technology has had a positive impact on their classroom. In addition, . Mobile Learning Is Accessible Any Time, Any Place

This means that teachers can turn to it to engage a learner at any point during the school day. Arguably more important than this, however, educational apps make it possible for children to continue these activities when they get home, not just in the classroom. Indeed, anywhere can be a classroom. App learning can be done anywhere, therefore, it is not limited to in-school time. In fact, many educational app developers have millions of downloads; students are using them outside of school. Incorporating mobile apps in class can increase engagement and reduce misbehavior both in class and at home. Many apps also have embedded videos that explain topics more clearly than a textbook (the same textbook they will forget, lose or not be bothered to carry around). Also, using less paper is more environmentally responsible.

It is also possible that collaboration will increase as students can use these devices as research tools during projects and group work (I have seen this with my own eyes in my classes, collaborating on apps is how today's students communicate, this literally puts learning in their own environment. Students can also use mobile applications to access a vast array of eBooks, pdf and other online materials. Technology Offers New Learning Techniques.

Engagement can be increased by introducing varied learning methods and because of the ever-increasing amount of educational mobile apps, you can do just that with ease and without a huge cost as many apps are free for students to download. Research into learning theories suggests that games and puzzles, that many apps use, can stimulate brain activity. This may offer pupils who have 'hit a wall' within a certain area of learning a chance to tackle that challenge from a new direction. Apps Can Enable Teachers to Decrease Their Paperwork. It's a relief to get all the mundane tasks done with a few taps along with cutting down the time spent on data collection. As you engage more students through classroom apps and by using EdTech in teaching and learning, the more data you will collect. Thus you will be able to achieve a better work-life balance. Primarily this data can be used to gauge the learning difficulties faced by the student and modify the instructions to then customize the learning for a better outcome.

The teachers' involvement in the curriculum development process is essential in meeting the needs of society. The process of curriculum development requires teachers to act and reflect on society's needs in each stage of the development process. Nevertheless, sometimes this process which teachers are requested to follow is unclear. For example, in South Africa most teachers are not qualified and lack the necessary skills to participate in curriculum development. Their approach of participation in the process is not well defined and very difficult on teachers, so they face many challenges regarding their involvement in curriculum development (Ramparsad, 2000). As a result, I think that there should be major advances in teacher development in order for teachers to actively reflect on society's needs in each stage of the curriculum development process. On the other hand, in any curriculum implementation process not all teachers will have the chance to be involved in these processes.

Professional development of teachers is as an important factor contributing to the success of curriculum development and implementation (Handler, 2010). So, we should think about what extent teacher education programs are needed for prospective teachers to study curriculum development. Because teachers have to be involved in curriculum development, the teacher should be provided with appropriate knowledge and skills that help them to effectively contribute in curriculum development operation. As a result, teachers need training and workshops, which are geared toward professional development to be able to contribute to curriculum development. On the other hand, there is an important point to make efficient in involvement teacher in curriculum development that is teachers have to be empowered in the process of curriculum development (Carl, 2009). This means teachers should have improvement and increasing in many points of them, such as experience and autonomy. Thus, teachers play an integral part in the process of developing the curriculum; then students' outcomes.

The teacher involved in curriculum organization has many roles and responsibilities. Teachers want to enjoy teaching and watching their students develop interests and skills in their interest area. The teacher may need to create lesson plans and syllabi within the framework of the given curriculum since the teacher's responsibilities are to implement the curriculum to meet student needs (Carl, 2009). Many studies support empowerment of teachers through participation of curriculum development. For example, Fullan (1991) found that the level of teacher involvement

as a center of curriculum development leads to effective achievement of educational reform. Therefore, the teacher is an important factor in the success of curriculum development including the steps of implication and evaluation. Handler (2010) also found that there is a need for teacher involvement in the development of curriculum. Teachers can contribute by collaboratively and effectively working with curriculum development teams and specialists to arrange and compose martial, textbooks, and content. Teacher involvement in the process of curriculum development is important to align content of curriculum with students needs in the classroom.

Teachers have critical roles and responsibilities in education, including facilitating student learning and managing classrooms (Seymen, 2012). Teachers also influence moral values, the transmission of culture, and new social changes in youths. As a contribution to social development, teachers should foster student morality to suit the society (Stojiljković, Djigić, & Zlatković, 2012). Shim (2008) also suggested that teachers engage in self-cultivation by modeling a favorable character and promote liberation and humanization by developing a critical consciousness in their students. Thus, teachers play multiple roles. The perceived roles of teachers within their professional networks influence how much responsibility they accept at work. Hattingh and de Kock (2008) found that teacher education programs with a strong focus on the roles of teachers had challenged some of the traditional roles in which student teachers saw themselves and further changed their way of learning. Çakmak (2011) demonstrated that student teachers changed their thoughts when guided by teacher role perceptions. When enrolled in a teacher education program, teacher education students are often expected to exhibit the perceived role and responsibilities of an effective teacher. However, whether these perceptions facilitate their self-learning is unclear.

Havelock and Hubberman (1978) argue that a major challenge in planning and implementing reforms in education is a tendency to formulate ambitious transformations without adequate plans on implementation. They also observe that in many countries curriculum change follows a heavy top-down approach. However, each stakeholder holds his own perspective to educational issues. Therefore, before pursuing curriculum changes, it is crucial for policy-makers and other stakeholders to have a thorough understanding of the roles, expectations and interests of the various actors, groups and institutions that are involved in, or affected by the change process (IBE-UNESCO, 2013).In a centralised governance system, like the one of Kenya, where the

constitution assigns the curriculum function to the national government, curriculum planners have to find a cost-effective and efficient approach to ensure stakeholder participation.

2.3.3 Influence of Teachers' attitude towards ICT in the competency-based curriculum

The effective implementation of this curriculum requires a joint collaboration of educators at all levels. Given the material requirements, teachers are expected to accomplish their noble roles. School head teachers and directors of studies are required to follow-up and assess the teaching and learning of ICT . These combined efforts will ensure bright future careers and lives for learners as well as the contemporary development of the country. Teacher should have a firm understanding of ICT concepts at the level he/she teaches. The teacher should possess the qualities of a good facilitator, organiser, problem solver, listener and adviser. He/she is required to have basic skills and competency of guidance and counseling because students may come to him/her for advice. A teacher should have a positive attitude and should possess particular skills, values and qualities for example, inspire children and community the devotion of learning and use of ICT, engage learners in variety of learning activities, use multiple teaching and assessment methods, adjust instruction to the level of the learners, use creativity and innovation in the teaching and learning process, be a good communicator and organizer, be a guide/facilitator and a counselor, manifest passion and impartial love for children in the teaching and learning process, link the use of ICT with other subjects and real life situations, have good classroom management skills.

Curriculum innovation tends to bring with it a degree of uncertainty about its purpose, its methods and its outcomes, for a number of teachers the threat which such an innovation presents to their professional identities must be a source of considerable anxiety. Since anxiety has the qualities of a 'drive' (Mowrer [2000]) and is a 'very relevant drive' in complex learning situations (Eysenek, 2001), we assume for the purpose of this discussion that it is a strong 'drive' in the context of curriculum innovation, And given that teachers' attitudes to well-established curricula are strong 'habits', the probability that learned responses to such curricula will be evoked in the context of curriculum innovation is very great indeed. It follows that for teachers with a high level of neuroticism, increased anxiety (or 'drive') is likely to be deleterious in that the strong tendency to respond with their existing, well-established attitudes to the curriculum and to reject

innovative ideas has an enhanced probability of evocation. This line of reasoning leads us to propose that amongst teachers a high level of neuroticism is likely to be associated with a negative attitude to curriculum innovation, and conversely, a low level of neuroticism is likely to be associated with a positive attitude. However, the 'learning' of new attitudes to new curricula, that is, the forging of new stimulus-response connections, could depend on the condition ability (or extroversion) of individuals. In Eysenek's theory of personality, under non-emotion producing conditions, introverts are in a state of relatively high cortical arousal (as compared with ambiverts) while extroverts are in a state of relatively low arousal. This 'cortical supremacy' in introverts produces a constraint on their behaviour. They are less impulsive and more conscientious. They are more likely to be influenced by social and institutional codes of behaviour. It follows that for subject departments of schools and colleges which function according to fairly rigid normative regimes, when a particular curriculum innovation is institutionalized, those teachers who are introverted are more likely than their extroverted colleagues to accept the innovation and to internalize the new curriculum ideas.

Professional development plays a part in reducing anxiety when implementing a new curriculum (Hall, 2015). Caropreso et al. (2016) also found this to be true when using the SoCQfrom the CBAM to assess teachers' perceptions of a mathematics curriculum during PD. Cetin(2016) found similar conclusions as Bautista et al. (2016) regarding the benefits of PD. Cetin(2016) included an increased understanding of science teachers' level of use for technology integration and the effect of PD sessions designed to improve comfort and proficiency. The teachers initially showed little knowledge on the subject area and a lack of training and skills necessary for successful integration. Cetin (2016) reported that following the PD sessions for technology, 58.5% of the teachers developed increased confidence and positive outlooks about the integration process. Cetin's study (2016) provides a concrete example of how PD improves teacher proficiency as well as alleviates concerns through the practical application of the curriculum. Teachers become more likely to implement curricula with fidelity when they feel well prepared through PD and develop the knowledge and awareness required for effective implementation (Cetin, 2016).Supporting the need for PD and for understanding the concerns connected to a new curriculum implementation, Bandura's (1977) social learning theory emphasizes the importance of monitoring and modeling behaviors, attitudes, and emotional

responses for a desired result. Bandura's (1977) theory connects to the CBAM because of the value it places on understanding emotional responses identified through the stages of concern. The importance of PD and the effect on teachers both align with the theory by directing attention to proper training for increased success in accurate curricular implementation.

2.3.4 Students' attitude and capacity in the success of a competency-based curriculum

The competency-based curriculum emphasizes students much participation in learning. Hence, they are required to do projects and research on their own with the guidance of the teacher. ICT is therefore a necessity in this endeavor. Self-learning is a process in which people determine their own learning necessities, aims, and learning sources with or without the help of others (Knowles, 1975; Siminică & Traistaru, 2013). Self-learning is regarded as a valuable skill in educational and work environments (Oliveira &Simoes, 2006). Among teacher education students, self-learning is a process by which the students try to acquire systematized knowledge offered in teacher education programs. Students who possess a high readiness level for self-learning are conscious of their own responsibility in learning. Notably, studies have indicated no differences in self-learning strategies based onthe gender of teacher education students (Çalişkan & Selçuk, 2010); however, according to the studies by Mohamoud-Mahfouz and Hassan-Ma'Ajini (2013) and Mok, Ma, Yuk, Liu, and So (2005), female students reported a relatively higher level of strategy awareness than male students did. Accordingly, the effect of gender on self-learning actions must be eliminated in this study. In sum, teacher education students' perceptions of teacher roles, self-concept, and self-efficacy may influence their self-learning actions.

As many adult students access the internet, they usually go to social media platforms like YouTube, Watsapp, Tick tock, etcetera. The use of social media is incomparably on the rise among students, influenced by the globalized forms of communication and the post-pandemic rush to use multiple social media platforms for education in different fields of study. Though social media has created tremendous chances for sharing ideas and emotions, the kind of social support it provides might fail to meet students' emotional needs, or the alleged positive effects might be short-lasting. In recent years, several studies have been conducted to explore the potential effects of social media on students' affective traits, such as stress, anxiety, depression,

and so on. The present paper reviews the findings of the exemplary published works of research to shed light on the positive and negative potential effects of the massive use of social media on students' emotional well-being. This review can be insightful for teachers who tend to take the potential psychological effects of social media for granted. They may want to know more about the actual effects of the over-reliance on and the excessive (and actually obsessive) use of social media on students' developing certain images of self and certain emotions which are not necessarily positive. There will be implications for pre- and in-service teacher training and professional development programs and all those involved in student affairs.

As cited in Miao-Chen and Xin-Xiao (2022), in a cross-sectional study, O'Dea and Campbell (2011) explored the impact of online interactions of social networks on the psychological distress of adolescent students. These researchers found a negative correlation between the time spent on social networking and mental distress. Dumitrache et al. (2012) explored the relations between depression and the identity associated with the use of the popular social media, the Facebook. This study showed significant associations between depression and the number of identity-related information pieces shared on this social network. Neira and Barber (2014) explored the relationship between students' social media use and depressed mood at teenage. No significant correlation was found between these two variables. In the same year, Tsitsika et al. (2014) explored the associations between excessive use of social media and internalizing emotions. These researchers found a positive correlation between more than 2-h a day use of social media and anxiety and depression.

Hanprathet et al. (2015) reported a statistically significant positive correlation between addiction to Facebook and depression among about a thousand high school students in wealthy populations of Thailand and warned against this psychological threat. Sampasa-Kanyinga and Lewis (2015) examined the relationship between social media use and psychological distress. These researchers found that the use of social media for more than 2 h a day was correlated with a higher intensity of psychological distress. Banjanin et al. (2015) tested the relationship between too much use of social networking and depression, yet found no statistically significant correlation between these two variables. Frison and Eggermont (2016) examined the relationships between different forms of Facebook use, perceived social support of social media, and male and female students' depressed mood. These researchers found a positive association

between the passive use of the Facebook and depression and also between the active use of the social media and depression. Furthermore, the perceived social support of the social media was found to mediate this association. Besides, gender was found as the other factor to mediate this relationship.

Vernon et al. (2017) explored change in negative investment in social networking in relation to change in depression and externalizing behavior. These researchers found that increased investment in social media predicted higher depression in adolescent students, which was a function of the effect of higher levels of disrupted sleep. Barry et al. (2017) explored the associations between the use of social media by adolescents and their psychosocial adjustment. Social media activity showed to be positively and moderately associated with depression and anxiety. Another investigation was focused on secondary school students in China conducted by Li et al. (2017). The findings showed a mediating role of insomnia on the significant correlation between depression and addiction to social media. In the same year, Yan et al. (2017) aimed to explore the time spent on social networks and its correlation with anxiety among middle school students. They found a significant positive correlation between more than 2-h use of social networks and the intensity of anxiety (As cited in Miao-Chen and Xin-Xiao, 2022).

Also in China, Wang et al. (2018) showed that addiction to social networking sites was correlated positively with depression, and this correlation was mediated by rumination. These researchers also found that this mediating effect was moderated by self-esteem. It means that the effect of addiction on depression was compounded by low self-esteem through rumination. In another work of research, Drouin et al. (2018) showed that though social media is expected to act as a form of social support for the majority of university students, it can adversely affect students' mental well-being, especially for those who already have high levels of anxiety and depression. In their research, the social media resources were found to be stress-inducing for half of the participants, all university students. The higher education population was also studied by Iwamoto and Chun (2020). These researchers investigated the emotional effects of social media in higher education and found that the socially supportive role of social media was overshadowed in the long run in university students' lives and, instead, fed into their perceived depression, anxiety, and stress.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

This chapter presents the methodology that guided the study. These include the research design, targeted population, sample sizes, sampling techniques and procedures, instruments that were used for data collection, validity and reliability of data collection tools, procedure for data collection, data analysis and the ethical considerations.

3.1 Research Design

This study used the cross- sectional survey research design. The cross- sectional research design is a research by which the whole population or its subset studies by seeking information about a study problem on what is going on at only one point in time (Olsen & Marie, 2004). The cross sectional design was used because cross sectional studies are generally quick, easy, and cheap to perform due to limited time spent in the field. With the cross- sectional design, the researcher collected appropriate data quickly and cheaply (Gravlee, Kennedy, Godoy & Leonard, 2009). The study depended on both quantitative and qualitative approaches. The quantitative approach help in testing hypotheses to draw statistical inferences while the qualitative approach supplements the quantitative one by providing detailed information (Guetterman, Fetters & Creswell, 2015). Therefore, the researcher was be able to draw statistical inferences and carry out an in- depth analysis.

3.2 Population

The population of the study was 122 teachers, 1300 students of S.1-S.3 classes where the competency-based curriculum was as of the year 2023 still operating, and 12 head teachers in the selected 12 schools in Nakasongola district. These provided the necessary data for the generalization of the findings.

3.3 Sample size and selection

The sample size was 400 respondents. These were 100 teachers of S.1-S.3, 300 students and ten headteachers from 12 secondary schools in the district. The teachers filled the questionnaires on teachers' attitude and capacity in regard to ICT, while the students filled a questionnaire on ICT

facilities' availability in schools and students' attitude and capacity in ICT use in the competency based curriculum. The headtechers were interviewed to provide oral information. Even five teachers and 15 students were interviewed to provide oral information.

3.4 Sampling procedures

The secondary schools were first clustered on grounds of being private or government aided. After that, purposive sampling was used to select from both the private and government aided schools. The choice was purposive by basing on the age of the school, economic status of the school, being day or boarding, as well as the foundation body. These factors were considered so that each of those categories could be included in the sample. Since teachers in the 12 schools were not many, they were all included in the sample.

3.5 Data Collection Methods

3.5.1 Questionnaire Survey method

The study was largely quantitative Therefore, the data collection method involved use of self-administered questionnaires (SAQs). This method enabled the researcher to cover the respondents quickly and at reasonable cost (Krosnick, Presser, Fealing Ruggles & Vannette, 2015). The questionnaire survey provides quantitative data that provide quantitative results that are used as a basis for generalization. The questionnaires are simple, short and structured enabling the respondents to fill more easily based on a five – point Likert scale (Where 1= strongly disagree 2= disagree 3= agree; and 4= strongly agree..

3.5.2 Interview method

Interviewing is a qualitative data collection method by which the researcher used to collect details of the respondents' answers on the items of the study variables. Interviewing provides in-depth information pertaining of participants' experiences and viewpoints of a particular topic (Jamshed, 2014). Qualitative analysis from interviews was added to the interpretation of data collected by survey. Interviewing help in providing very complete responses since the respondents provides in depth information necessary for deep explanation and clarity (Kinchin, streatfield& Hay, 2010).

3.6 Quality control

A pilot study was conducted to obtain the content validity of the instrument. The process of pre-testing the instrument was done in three schools which did not participate in the actual study. Each of these schools was chosen from a different county namely: Kyabujingo County, Buruuli County and Budyebo County. These schools had similar conditions with those other 12 schools which participated in the actual study. The respondents were purposively selected from experienced teachers who were asked to comment on the relevance of the content, clarity of the questions, and the time taken to complete the questionnaire. Some items were modified or deleted to accommodate the feedback, which led to the revised questionnaire of 17 items. Frequencies and percentages of the 17 survey items were presented to answer the descriptive part of the three research questions. With regards to the inferential part of the research questions of RQ2 and RQ3, Cronbach's alphas of the subscales were calculated before proceeding further. The Cronbach's alpha of all the 17 items was 0.754, but some of the items were removed to increase the internal consistency of the subscales to answer inferential research questions. Specifically, items C1, C2, C4, and C5 had the Cronbach's alpha of 0.70, and the average of the four items served as the dependent variable of RQ2, teacher capacity for ICT integration. Likewise, the average of P1 and P3 to measure teacher perception on ICT usefulness served as the dependent variable of RQ3, the Cronbach's alpha of which was 0.76. According to Nunnully (1978), Cronbach's alpha at or above 0.70 is acceptable as a test for the internal consistency of an instrument. The subscale internal consistency of teacher perception on ICT use was slightly lower but close to the nominal value of 0.70.

3.7 Data Processing and Analysis

3.7.1 Quantitative Data

After collecting the data, the researcher carried out data processing through coding, entering the data into the computer using the statistical package for Social science (SPSS 24.0), summarizing them using frequency tables to identity errors and editing them to remove errors (Greasley, 2007). Quantitative data analysis involving calculation of descriptive statistics and frequencies for descriptive analysis. For inferential statistics, correlation and regression analysis was used in the testing of hypothesis (Simpson, 2015). This produced data necessary for generalization of the findings.

3.7.2 Qualitative data

The qualitative data collected coded and grouped according to the study objectives and emerging themes. Analysis was done out through discursive method (Kohlbacher, 2006). The discursive method considered detail of the text, interpreting the analyzed text and attributing meaning. Qualitative data supplemented quantitative data helpedin providing explanations.

3.8 Ethical Considerations

The researcher respected the rights of others throughout the study. The researcher sought consent of the respondents before data collection. The researcher briefed the respondents as to why to select participants in the study. The respondents were informed how they are chosen.

The respondents' views and responses were confidential and remained anonymous. To avoid bias, during data management and analysis.

CHAPTER FOUR
PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.0 Introduction

This chapter essentially caters for the presentation of data generated, its interpretation, analysis and discussion thereof. The data was collected from Nakasongola district among students, teachers and head teachers. Data was presented in a descriptive form using texts, tables and the analysis was handled thematically in relation to the objectives of the researcher.

Descriptive was used to describe characteristics of a population or phenomenon that were being studied. The description was used for frequencies, averages and other statistical calculations.

4.1. Response Rate

The researcher and his five research assistants distributed questionnaires to 100 teachers and 300 students to provide data on the issues at hand. The research achieved a response rate of 75%. In other words, out of the 100questionnaires distributed, 75 questionnaires were returned. Therefore with this response rate, there is high confidence that the responses received on the study are reliable. Mugenda (1999) as well as Saunders (2007) suggest that a response rate of 50% is adequate when quantitative data is manually collected. Table 4.1 below presents a breakdown of the response rate of the respondents by their categorization.

Table 4.1: Response Rate

Respondents Category	**Sample Size**	**Actual returned**	**Percentage**
Teachers	100	75	**75**
Students	205	200	**98**

Source: Primary Data, 2023

Table 4.1 above presents the response rate of the responses to which the research instruments were administered. The findings presented show that out of 100teacher respondents targeted and given questionnaires, 75 filled and returned them. The remaining 25 respondents did not return them.

4.2. Respondents

4.2.1 Demographic traits of Teachers as respondents

This was based on the gender of respondents, gender, age, education and marital status. This was intended to attain a detailed understanding of the respondent's key characteristics influences the result of the study. The general information has an implication on the study variables. The different demographic characteristics are analyzed and presented in table 4.2.1.

Table 4.2: Demographic Characteristics of the Teacher Respondents (n=75)

Categories	Response	Frequency	Percentages
Gender	Male	42	56
	Female	33	44
	Total	**75**	**100**
Age	24-35	28	37.3
	36 -45	31	41.33
	46-50	10	13.33
	51 Years above	6	8
	Total	**150**	**100**
Marital status			
	Married	43	57.33
	Divorced	2	2.7
	Widow	3	4
	Single	27	36
	Total	**75**	**100**
Education	Certificate	00	
	Diploma	10	13.3
	Degree	63	84
	Masters	2	2.7
	Total	**75**	**100**
Working experience	1-2 years	5	6.6
	3-5 years	10	13.33
	6-10 years	28	37.3
	Above 10 years	32	42.7
	Total	**75**	**100**

Source: Field Data, 2023

Table 4.2 presents the findings on the demographic characteristics of teacher respondents. The demographics are presented in the forms of gender, age, academic qualifications and time of working/stay of respondents.

The presentations were that on the gender of respondents, majority of the respondents were male who constituted 56% of the total respondents while the female were 44%.The findings imply that the respondents were both male and female, the schools are dominated by male teachers.

The Table further present the results/ findings on the age of the respondents, the majority of respondents 41.33 were aged between 36-45 years, while 37.3% of respondents were between 24-35 years, 13.33% were between 36-50 years, while only 8.0% were 51 years and above. This implies that most schools in Nakasongola district are mainly full of teachers having 24-35 years and 36 -45 years.

The study findings also present information regarding the education of the respondents. Out of the respondents, the majority were Bachelors degree holders (84%), followed by diploma holders (13.3%). Only 2.7% of respondents were Master degree holders. The study findings therefore on average reveal that the data was collected from respondents with good education background, it is pivotal to argue that data was collected from understanding people/ respondents of the study.

The findings also reveal that majority of the respondents had worked for a period of ten years and above (42.7%). Followed by those who have worked for 6-10years (37.3%).Those of 3-5 years were ONLY 13.33% of the respondents. The study findings imply that majority of the respondents have taught in secondary schools in for quite long, and thus have enough experience.

Table 4.3 on the other hand shows the demographic characteristics of the student respondents.

Table 4.3: Demographic Characteristics of the Student Respondents (n=200)

Categories	Response	Frequency	Percentages
Gender	Male	120	60
	Female	80	40
	Total	**200**	**100**
Age	13-15	180	90
	16 years and above	20	10
	Total	**200**	**100**

Source: Primary data, 2023.

Table 4.2.1 shows that the majority of the students who participated in the study were boys (60%). The girls were 40%. Secondly, the majority of these respondents were aged between 13 and 15 years. Only 10% were aged 16 years and above. No wonder that their interest in ICT was high since they have been born during the computer era.

4.3 Results as per the Research Objectives

4.3.1 **To what extent are ICT facilities available in lower private secondary schools,** Nakasongola district, Uganda?

The study found out that ICT facilities are available in lower private secondary schools, Nakasongola district, Uganda to a small extent as shown in table 4.4.

Table 4.4: showing the ranking analysis of ICT facilities availability in lower private secondary schools, Nakasongola district, Uganda

.	**Mean**	**Std.**	**Interpretation**
Internet connectivity is available	2.78	1.594	Large extent
Network devices: Switch, router, wireless access point, server, and crimping tools	2.79	1.546	Large extent
Teachers have laptops	2.27	1.340	Small extent
projector is available	2.35	1.385	Small extent
Broadcasting technology: Television Printer and scanner are available in the school	2.45	1.525	Small extent
Radios are available in the school.	2.98	1.210	Large extent
There is reliable power supply in the school	2.47	1.424	Small extent
crimping tools are available	2.32	1.432	Small extent
digital camera is available	2.20	1.542	Very Small extent
Billing machine or simulator is available	2.24	2.104	Small extent
Programmable calculator is available at school	2.44	1.643	Small extent
Average mean	**2.42**	**.73440**	**Small extent**

Source: Primary data, 2023.

Quantitative data from table 4.4 shows that ICT facilities are available in schools to a small extent (mean 2.42). This means that ICT equipment are few. As the table shows, ICT facilities are available to a small extent. In visiting various schools, the researcher however found out that there are a few government aided schools that have internet connectivity, ICT laboratories for example Lwabiyata Seed Secondary School, Nakasongola S.S with an 11grid laboratory, Kisaalizi S.S also with an 11 grid laboratory, Kakooge S.S with a 20-solar, Kalongo Seed S.S

with a 20-Solar connected by Maisha, and Nakasongola Army S.S with a 40 grid laboratory connected by MTN. They reported that at the secondary school level, the main provider of ICT equipment and Connectivity has been Uganda Communications Commission through the Rural Communications Development Fund (RCDF) in partnership with the Ministry of Education. Almost all government owned schools and all national teacher training colleges were equipped with ICT labs between 2008 and 2014, a tremendous achievement that made possible the delivery of digital skills training at nearly every government secondary school. In private schools however, it was worse. Many of them which are actually the majority in the district did not have ICT equipment. Some teachers did not even have Smart phones; instead they had button phones which were not connected to the internet.

Several head teachers however pointed out that most of the equipment is due for replacement. Another observation made by head teachers is that the school labs that were delivered are based on a thin-client technology while the Uganda National Examinations Board requires "fat client" computers for Computer Studies and ICT Subsidiary. Another issue pointed out is the sustainability of the connectivity as school lacked funds to continue paying for connectivity after RCDF support ended. Stakeholders feel that the lack of an ICT in Education policy may be hindering continuous and sustained investments in the ICT infrastructure and connectivity by the Ministry of Education and its Partners.

In one school found in Budyebo County, a headteacher during oral interviews said that **s**ince a competency-based curriculum involves a fundamental shift from passive to active learning, the infrastructure needed for this model is very different. In order to implement a competency-based curriculum, educational institutions require everything from modern classrooms, creative centers, smart boards, laboratories, and the latest technologies at all levels, as it can help students to actively participate in the learning process. This essentially means that the administrators need to be fully convinced about the advantages that their institutions accrue from implementing the new competency-based learning model. Nevertheless he said, "Our hands are tied. We do not have the means. This is a USE school and we have a few computers supplied by the government. Though computers are available, we are lacking the means to pay for power/electricity, hence students' limited use of computers".

In many private schools however, especially those found in Kyabujingo and Budyebo counties, digital Skills development is hampered by lack of adequate equipment, software and connectivity at all levels of the education system. The general feedback is that schools and tertiary level institutions lack adequate equipment such as computers, software and content and connectivity to adequately develop the digital skills of students. At the university level, Headteachers indicated that there is a need to improve the ICT infrastructure and increase andre-skill the teachers, to upgrade the teaching and learning ICT labs and the provision ICT research infrastructure.

Teachers said that although some schools find challenges in ICT connectivity, their students are having social media profiles on various platforms. So, teachers found a way to utilize this trend and turn it into a powerful tool for enhancing the learning process. They reported that some teachers or schools have started using social media as a communication tool, where students can interact with their peers and school members. Usually, students share videos and images with their friends and followers. But with social features embedded in their eBooks, they can share study materials, opinions, projects etc. They can comment on someone else's post or share links to other websites, all the while building peer networks and enhancing the online learning experience. Teachers allow the use of social media as part of the learning model because it helps students to stay interested in their course and increases engagement. Social media is here to stay and incorporating it into learning modules will build a culture of collaboration and sharing, leading to an improved learning experience.

Many schools have official media platforms on Twitter and Facebook and some parents and students use these platforms to exchange ideas some of which are related to competency-based curriculum. The respondents however noted that many teachers and some headteachers do not freely express themselves on these platforms fearing that those engaging them might be spies from the security agencies of the State. Since Nakasongola has a large State army barracks and army training ground, the possibility of using spies on such platforms is there. After all, even some parents and students are either active soldiers or government informers or are linked to state security agencies. Actually, one head teacher who seemed to be highly knowledgeable about the law went further and contended that Uganda as a country has legislation such as the Anti-Terrorism Act, 2002, which make it illegal to disseminate and publish news or materials that promote terrorism, with punishments of up to ten years imprisonment.21 Further, Section

41(c) of the Uganda Communications Commission Act, 2013 Act gives power to the commission to "suspend" or "revoke" a license "where the operator is engaged in or is supporting activities amounting to a treasonable offence under the Penal Code Act." Section 23, Subsection 2 of the Penal Code Act of 1950, defines Treason and Offences against the State as, "Any person who forms an intention to effect any of the following purposes — to compel by force or constrain the Government as by law established to change its measures or counsels or to intimidate or overawe Parliament."22 This open-ended definition creates an opportunity for its use to gag individuals who question government practices. Meanwhile, the Regulation of Interception of Communications Act gives wide-ranging powers to Government to intercept citizens' communications. Section 5 (1) states that a warrant shall be issued by a designated judge if there are reasonable grounds to believe that: (c) the gathering of information concerning an actual threat to national security or to any national economic interest is necessary; (d) the gathering of information concerning a potential threat to public safety, national security or any national economic interest is necessary. Service providers are legally obliged to work with government officials in the monitoring of communications.23 This law, and perceptions of government monitoring of citizens' communications, have abetted self-censorship by the media, thereby stifling public debate. Moreover, some critics fault the regulator (UCC) for playing into the hands of the government by creating a perception of being used to witch-hunt the political opposition.

4.3.2 To what extent are teachers capable of integrating ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda?

The study found out that teachers integrate ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda, to a small extent as shown in table 4.5.

Table 4.5: showing the Ranked analysis of teachers' capacity to integrate ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda

Item	**Mean**	**Std.**	**Interpretation**
I know how to use a computer while teaching	1.91	1.201	Small extent
I use Spread sheet programming	1.83	1.039	Small extent
Iam able to use Computer aided instruction& computer mediated conferencing, video/audio conferencing	1.82	1.080	Small extent
I use Data bases for information storage	1.77	1.032	Small extent
I know how to use Graphing software to prepare learning resources	1.61	.892	Small extent
Iam able to use Digital libraries , e-books	1.60	1.165	Small extent
Lam able to use Microsoft publishing -news letter, poster, brochure	1.58	.931	Small extent
I use Smartphone to do assignments	1.52	.986	Small extent
Average mean	**1.67**	**.51556**	**Small extent**

Source: Primary data, 2023.

Table 4.5 shows that teachers are able to integrate ICT in the competency-based curriculum to a small extent. This means that the majority of teachers in Nakasongola are poor at ICT skills integration in teaching. They said that what they know best is the use of smart phones in searching for the required materials/work but they are limited with money for buying mbs to

access the internet. They also said that it is time consuming, so they teach and assign the students to use ICT to do assignments.

During oral interviews, it was revealed by headteachers and teachers that the new curriculum is designed to reduce teachers' lecture delivery and help learners to participate actively. Teachers have now noticed a reduction in their exertion levels during teaching since they act as a facilitator for learning. This will help reduce teacher burnout as earlier teachers only used to speak with very few breaks in between and not much active learning. They stressed that the new curriculum emphasises group work, group presentations, peer-to-peer learning and learner-centred teaching to develop the confidence, oratory and presentation skills exhibited by the students. Another head teacher in Buruuli gave his experience of how the new curriculum was promoting teamwork and critical thinking because of the peer learning strategy, where learners pair up to share their understanding of a particular concept and hence learn from each other. The teacher then intervenes to check for understanding and clarify any concepts or doubts that the learners may have.

Some teachers in government schools however reported that bringing technology into the classroom has made classrooms lively and interactive. With eBooks, which can be got on the internet, the course content can be embedded with videos, augmented reality, audio files etc. Unlike a printed book, eBook allows for more interaction to take place in the classroom. The flipped classroom model has allowed students to do all the learning at home and all the practical work at school. All these new technologies have brought about a change in the way that classes used to function traditionally. Teachers can now assist and guide students with their homework in class. They can have discussions and activities in classrooms, creating an interactive environment where students are completely involved in the learning process. Creating interaction and engagement has become a priority for many schools and universities. This style of learning has seen a growth in recent years for its ability to keep students engaged in the classrooms

It was however reported by teachers especially those who teach ICT that integrating ICT in the competency-based curriculum is important as it enables facilitating increased interaction with students; providing for differentiation of learners according to their strengths and weaknesses so that they are targeted better; Supporting students to create and innovate so that they are engaged

in managing their own learning goals and activities; Use of technology to monitor and ensure teacher attendance results under students and teachers respectively, accepting ownership of their own professional learning and, where appropriate, designing and participating in learning communities that make extensive use of technology.

Teachers reported that Critical thinking generic skill, one of the key generic skills in the competency based curriculum can be promoted by ICT, therefore, the use of internet through Smartphones is necessary. Through use of ICT, learners and teachers do access information related to what is taught. In doing research, they use ICT like the internet. In doing so, they come across platforms like the ICT-enabled Social Accountability Initiatives, Know Your Budget: Set up by the Finance Ministry in 2013. This portal allows citizens to access and give feedback on budget performance at national and local levels.38 Through the portal, Government budget expenditure and plans for the various levels from national to the local government down to the sub-county level are available. A toll free hotline and help desk for inquiries complement the online portal. Despite this bend towards openness, the country is also ranked amongst the most corrupt in the world, coming in at position 142 out of 175 countries surveyed by the Transparency International global corruption index. The East African Bribery Index of 2014 places the likelihood of corruption in Uganda at 17.9%, compared to 12.3% in neighbouring Kenya. The survey found that respondents in the country paid a bribe as a means of accessing services. Even the Inspectorate of Government (IGG) has launched an ICT-based initiative to receive corruption information and tip-offs from the public. Through the IGG SMS Corruption Tracker, a case can be reported to the inspectorate via the website or the SMS platform that was launched in June 2013. Incidents can be reported by texting CORRUPT to 6009 toll free. While this initiative is welcome, there are concerns over the safety of whistle-blowers whose personal data (registered phone number) is shared during the submission. Besides, with few corruption scandals decisively handled by government, citizens are becoming weary of reporting cases. The lack of a witness protection law exacerbates this frustration. As students under the new curriculum use ICT to know these issues and analyse these issues and analyse them, their critical thinking is developed by querying the claimed democratic principles in Uganda.

4.3.3 What is the perception of teachers towards using ICT in the implementation of a competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda?

Table 4.6: Rate of perception of teachers towards using ICT in the implementation of a competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda

	Mean	**Std.**	**Interpretation**
Smart mobile phones are necessary while teaching	2.13	1.235	Poor
Internet use in the learning process is good	2.04	.825	Poor
The use of ICT in the competency based curriculum promotes competencies like creativity, communication, critical thinking, collaboration, citizenship and connectivity for the future education	1.91	1.088	Poor
The use of ICT in the competency based curriculum promotes generic skills like communication, learning to learn etc	1.89	.998	Poor
The use of ICT in the competency based curriculum promotes the morals of learners	1.88	1.213	Poor
The use of ICT in the competency based curriculum promotes Online data sharing platforms	1.68	.974	Very poor
Average mean	**1.65**	**.39344**	V**ery poor**

Source: Primary data, 2023.

Teachers during oral interviews in one Universal Secondary Education (USE) school said that the use of ICT in the competency based curriculum is very challenging because ofthe large class size. A higher number of students in a classroom tends to affect student-instructor interactions and can also prevent peer exchanges during discussions in the classroom. They said that since every student learns differently, the instructor's pace in a high-density class may work for some

students but not for others. This greatly hinders implementation of competency-based curriculum and restricts educators from applying learner-centric interactive teaching methods.

Some teachers said that one of the major challenges facing CBC in secondary schools is standardizing the mechanisms in which competencies or skills are assessed. This is because, being a personalized learning approach, CBC focuses largely on subject mastery, irrespective of the place, time, and pathway to completion. In this way, teachers find some concerns in terms of assessment implementation as per the new curriculum, for example, How to measure each student for every performance outcome; how to identify opportunities for learners to demonstrate individualized subject mastery without adhering to standardized performance outcomes; who determines the student learning outcomes, and should they vary from school to school?

During interactions with teachers and headteachers, it was revealed that teachers in many schools are ill-equipped to implement competency-based curriculum unless they were a product of it themselves. This is the reason why building their capacity is one of the essential prerequisites before implementing competency-based learning. Further, there are challenges related to the instructor's knowledge of competency-based pedagogy. While some of them might understand competency-based learning, a large number of fresh graduates from universities, as well as the old teachers used to the old curriculum, still struggle with the concept and lack the capacity demanded by the competency-based system.

4.3.4 Students' attitude and capacity to use ICT IN competency-based learning

On this objective, the finding was that to a large extent, students are capable of integrating ICT in the competency based curriculum and they perceive it to be good. In other words, the majority of students have a positive attitude towards ICT. Although the majority of them do not have the capacity to own personal computers and Smartphones, they access these services from friends outside school (as revealed during oral interviews). They also usually go to internet cafes to access the internet. This is shown in table 4.3.3.

Table 4.7: showing ranking analysis of Students' attitude and capacity to use ICT in the competency-based learning

1.	**Students' capacity to integrate ICT in the competency-based curriculum**	**Mean**	**Sd**	**Interpretation**
	I know how to use Graphing software to prepare learning resources	2.43	.312	Small extent
	Iam able to use Digital libraries , e-books	2.48	.321	Small extent
	Lam able to use Microsoft publishing -news letter, poster, brochure	1.99	.238	Small extent
	I use Smartphone to do assignments	4.12	1.103	Small extent
	I use internet on the computer to do assignments	3.87	1.003	Small extent
	I use e-mail and SMS to communicate with others	3.62	1.12	Small extent
	I use Data bases for information storage	1.98	.267	Small extent
	Average Mean	**2.93**		**Large extent**
2	**Students' attitude towards using ICT in the competency-based curriculum**			Large extent
	Smart mobile phones are necessary while teaching	4.10	1.100	Small extent
	Internet use in the learning process is good	4.46	.970	
	The use of ICT in the competency based curriculum promotes competencies like creativity, communication, critical thinking, collaboration, citizenship and connectivity for the future education	4.35	1.001	large extent
	The use of ICT in the competency based curriculum promotes generic skills like communication, learning to learn etc	4.10	1.100	Large extent
	The use of ICT in the competency based curriculum promotes the morals of learners	2.08	.946	Small extent
	The use of ICT in the competency based curriculum promotes Online data sharing platforms	4.00	.747	Large extent
	Average Mean	**3.85**		**Very large extent**
	Grand Mean	**3.39**		**Large extent**

Source: Primary data, 2023.

Table 4.7 reveals that the majority of secondary school students have the capacity to integrate ICT in the competency based curriculum especially in the use of Smartphones to do assignments, use of computer to do assignments by goggling, and in using e-mails and SMS to communicate with others.

As for the attitude, their attitude is very positive. They revealed during oral interviews that this is a computer age, they have been born during the age when phones and computers are no longer a luxury but a necessity.

Students who were interviewed said that although ICT facilities are limited in their schools, they like it and they have a positive attitude towards it since they use smart phones of their parents to do research in groups and make classroom presentations. This has improved the relationship between teachers and learners and it has promoted the ability of learners to consult and ask questions both inside and outside the classroom. This develops self-esteem, confidence and critical thinking amongst learners which are key 21st-century skills needed in the professional setting. The new methodology of teaching has also improved the relationship among learners, as the new curriculum is mainly hinged on group work and group presentations in class, as well as group projects outside class. Learners are developing their teamwork and collaboration, as also their presentation and public speaking skills.

During oral interviews, it was revealed by students that they mainly use the internet for googling what the teachers have asked them to research about. They also said that they enjoy social media platforms like You Tube, Tick tock, Watsapp, etc. Some of them however reported that social media can play the role of a mediational means between learners and the real environment. Learners' understanding of this environment can be mediated by the image shaped via social media. This image can be either close to or different from the reality. In the case of the former, learners can develop their self-image and self-esteem. In the case of the latter, learners might develop unrealistic expectations of themselves by comparing themselves to others. As it will be reviewed below among the affective variables increased or decreased in students under the influence of the massive use of social media are anxiety, stress, depression, distress, rumination, and self-esteem.

Students during oral interviews one school found at Kakooge said that in ICT they mainly use Social media because it connects people from across the globe; Social media makes education more accessible for all students; Connection with family and friends is easy and simple, regardless of physical distance; Young people can showcase their individual talents much easier with social media platforms; Social media allows young people to get a more unbiased view of current affairs by having multiple sources at their fingertips; and that Job opportunities are more accessible, both in social media itself and any other career path.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a thorough discussion of the findings of the study, the conclusions from the findings, as well as the recommendations.

5.1 Discussion

5.1. 1 To what extent are ICT facilities available in lower private secondary schools, Nakasongola district, Uganda?

The study found out that ICT facilities are available in secondary schools to a small extent and the most affected are the private schools. This is an unfortunate scenario as it limits teachers' and students' ability to research and hence effectively handle the competency based curriculum. Technology is vital. For instance, in many government aided secondary schools where the study was carried out, it was reported by head teachers that eduTrac is a mobile phone-based data collection system piloted by UNICEF in partnership with the Ministry of Education to monitor education services delivery. Districts identify bottlenecks at school level, track accountability for resolution of issues arising from eduTrac reports and improve planning for education. EduTrac receives data from schools through a poll system to reporters that are categorised in different groups such as Headmasters, Literacy Teachers, English teachers, etc. The questions asked are unique to each group. Regular reports are expected from the head teacher, School Management Committee (SMC) members and sub-county members of the Girls' Education Movement (GEM), thereby creating partnerships among all education stakeholders. District officials are then expected to follow up on these reports and prioritise visits while at a higher level these reports feed into the planning of the education ministry. EduTrac has over 9,000 active reporters with 2,819 schools being tracked. Due to its dependence on an open source framework and possible use on feature phones, it is likely that its spread will not be hindered by technology. Messages are sent toll free to short code 6200.

Access to different organizations in the country e.g. for the Uganda Registration Services Bureau, the website link is http://www.ursb.go.ug. Therefore, as students are being taught or are researching about Companies to know how to registering trademarks and copyright, get

liquidation and official receiver services, do online business name search, do business and civil registration forms, they can use that link to know and see what they are studying about. As for Uganda Revenue Authority, its Web is: http://www.ura.go.ug; Twitter: https://twitter.com/urauganda; Facebook: https://www.facebook.com/URApage. Students can use these to know how to access Electronic-tax related services like tax registration, payments, motor vehicle verification and stamp duty declarations; Tax Tools such as motor vehicle tax calculator, document authentication; Tax Assistant – online help desk service; Compliance – Whistle Blowing. As for Kampala Capital City Authority, its Website is: http://www.kcca.go.ug; Twitter: https://www.twitter.com/kccaug; Facebook: https://www.facebook.com/kccaug. as for the National Water and Sewerage Cooperation (NWSC) a website that provides information on services, tariffs and how to pay is available. A toll free helpline number is also available. Users are also able to apply for new connections through the portal. Registered users are able to check account balances online and browse statements online. Similar services are available through a mobile application for Android which is also available for free download through Google. The App is enabled for payment for customers through telecom service provider MTN. The national Electricity supplier, UMEME, also provides online information on tariffs, services, billing, metering and power outages. Downloadable forms are available for new connections. Complaints can be submitted and faults reported online.

Students nowadays can use the hands-on, to know and see whatever they are studying, hence improving their skills. As earlier researchers indicated, ICT is important in schools to promote learners' generic skills are important because jobs today require flexibility, initiative and the ability to undertake many different tasks. They are not as narrowly prescribed and defined as in the past and generally they are more service oriented, making information and social skills increasingly important. Employers now focus on adaptation, cost reduction, increased productivity, and new markets, products and services. Employees need to demonstrate teamwork, problem-solving, and the capacity to deal with non-routine processes. They should also be able to make decisions, take responsibility and communicate effectively. Proficiency in the broad range of generic skills has become the main requirement for the modern worker (Australian Chamber of Commerce and Industry & Business Council of Australia 2002).

Employers seek to recruit and retain employees with these skills; thus, education programs that emphasise such skills offer learners a comparative advantage in the labour market. Education providers are also interested in generic skills because they encourage learners to be more reflective and self-directed (Hager, Holland &Beckett 2002).Internationally, there is increasing emphasis being placed on active citizenship and community capacity as reflected in the extensive work on learning communities. Generic skills feature prominently in this body of literature as fundamental to developing successful, progressive communities.

5.1.2 To what extent are teachers capable of integrating ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda?

The study found out that teachers integrate ICT in the competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda, to a small extent. This relates to Lochner, Conrad, and Graham (2015), who held that teachers are central to whether a curriculum is delivered consistently, effectively, and with efficacy to enable the support of student progress and growth. In a study, the NCES (2017) conducted on curriculum fidelity and professional development, teachers self-reported fidelity rates when implementing an English language learner (ELL) program. The authors, who used a log to rate the level and amount of time spent on using the curriculum as prescribed, found that 16% of participants recorded decreased levels of fidelity, 51% recorded average levels of fidelity, and 30% recorded consistent fidelity of implementation, as prescribed by the curriculum developers. Previous researchers have shown a need to identify the factors that contribute to teacher concerns and which barriers prevent full curriculum implementation (Lochner et al., 2015). Understanding the barriers to complete implementation of a new curriculum could provide education administrators with tools to address teacher concerns and could provide vital training for successful implementation (AIR, 2016)

Indeed, to ensure that curricular innovations are implemented with fidelity, instructional practices should be aligned to the specific learning goals provided in the curriculum (MacDonald, Barton, Baguley, & Hartwig, 2016; Phillips, Ingrole, Burris, &Tabulda, 2017). Curricular implementation encompasses different components, including the delivery of the curriculum through resources and instructional practices. To implement curricula with fidelity, instructional practices must align with the curriculum as well as support the individual needs of

the students (Causarano, 2015). In addition, teacher preparedness for curriculum implementation plays a vital role (McNeill et al., 2016.

The findings from several studies supported the need for teachers to know the curriculum well to strengthen instructional practices. Content instruction depends on the quality of the explanations the teachers offer (MacDonald et al., 2016). MacDonald et al. (2016) reinforce the need for quality instruction and commitment through their recommendation that PD should help teachers deliver the prescribed curriculum. Sometimes the problem with implementation results from a problem with the curriculum itself (Caropreso, Haggerty, &Ladenheim, 2016). Bell (2015) analyzed the advantages and disadvantages of an English grammar curriculum; specifically, the guidance and directives provided to support teachers. Though Bell found the curriculum to be accurate overall, he found that the materials lacked pedagogical guidance to help teachers understand the lessons accurately enough to teach them. Bell pointed out another necessary component when considering the adoption of a new curriculum, but he reinforced how proper training played into implementing the curriculum with confidence (Caropreso et al., 2016; McNeill et al., 2016). Bell found that lack of training or guidance for curriculum hindered accurate delivery to students. Once again, this type of barrier has been found to influence student growth and learning (Causarano, 2015).

A curriculum that emphasizes the complex outcomes of a learning process (i.e. knowledge, skills and attitudes to be applied by learners) rather than mainly focusing on what learners are expected to learn about in terms of traditionally-defined subject content. In principle such a curriculum is learner-centred and adaptive to the changing needs of students, teachers and society. It implies that learning activities and environments are chosen so that learners can acquire and apply the knowledge, skills and attitudes to situations they encounter in everyday life. Competency-based curricula are usually designed around a set of key competences/competencies that can be cross-curricular and/or subject-bound.

5.1.3 What is the perception of teachers towards using ICT in the implementation of a competency-based curriculum in lower private secondary schools, Nakasongola district, Uganda?

On this, the study found out that the majority of teachers have a negative attitude towards ICT in the competency-based curriculum. Although technology offers lots of opportunities for collaboration between students in the classroom. For example, by using Google Drive and Google Docs (in fact any of the Google Suite), students can work on the same document together at any time. With features for annotating each other's work and adding suggestions, students can continue to work collaboratively outside of the classroom too. Google also offers another great way for students to collaborate with one another: Hangouts. This app facilitates group voice/video calls meaning group work can continue even when all members are at home

Despite the skill gap that exists among teachers in technology integration, our study shows that generally, teachers had a high perception. Similarly, Wambiri and Ndani (2016) concluded that teachers in Kenyan primary schools had high attitudes towards the use of various technologies indicating that with the requisite support the use of ICT in schools would be achieved. This is also supported by the finding that teachers had the high belief that ICT use would not only benefit them in the organization of instruction but also their learners. The perception of the usefulness of technology to learners by teachers is important because it helps the teacher to invoke the innovativeness and creativity of the learner (Kalpana, 2014; KICD, 2017; Wang, 2008; Waweru, 2018). The perception of technology is time-consuming, however, can be attributed to inadequate training on the pedagogical use of ICT as found in previous studies (Sharples & Moldeus, 2014). This means that due to inadequate preparation, such teachers would need the help of computer technicians for successful integration. According to Heinrich et al. (2020), the teachers' beliefs about time and the effort needed for technology integration generally affect their perception of the ease of use and perceived usefulness to their learners. The perception of learner safety while using the internet could be attributed to inadequate teacher preparation for the safe use to both learners and teachers.

We also analyzed the effect of age and gender on the perception of usefulness and age. Teachers in their 40 s found ICT more useful than their counterparts in the 30 s. This finding was different

from previous research that found the perception to be higher among younger teachers (Wambiri&Ndani, 2016). This difference could have been occasioned by sample composition in our study since the number of teachers in the 30 s was two times more than those in the 40 s. However, Bebell et al. (2004) warn that it is not obvious that younger teachers would have a higher perception of technology. A test of how teachers of different ages perceive the usefulness of specific technologies in the performance of their duties would lead to a more detailed analysis. Additionally, our analysis on the effect of gender on the perceived usefulness of technology among teachers did not show any statistical difference. This was consistent with Buliva (2018) who found no significant difference in the perception of technology use among teachers by gender. It, therefore, suggests that exemplary performance in the integration of technology should be expected from all teachers. The results also indicate that policymakers should formulate ways to equip male and female teachers with technology integration skills since they all have high perceptions and significant skill gaps. However, Venkatesh et al. (2003) noted that based on socialization, men would perceive certain technology as more useful if it allowed them to accomplish a task faster.

As earlier studies indicated, innovation (such as ICT in education) is indeed accompanied by a building up of uncertainty, arising from the complexity, ambiguity, and perplexity which often characterize curriculum development projects. Such uncertainty even if it is not so intense as to cause anguish as Schon has described, may be expected to arouse teachers and stimulate them to react to the innovation. However, teachers may reactin quite different ways. Thus, an increase in uncertainty may be an antidote to the 'general boredom and repetitiveness' of school life (Jenkins, 2010); it permits teachers to identify themselves occupationally as innovators and opens up possibilities for 'exotic career moves'. Jenkins also thinks that 'institutionalized un-certainty' forces teachers to reconsider the way in which they are anchored to the perspectives and reference groups which have been of help to them in their teaching. On the other hand, the relevant literature also shows that often enough uncertainty leads to resistance to change. Thus, Owen [20] asserts that each time a teacher is uncertain about what faces him; he (the teacher) is 'properly cautious' and that such caution either looks like resistance or transforms itself into purposeful resistance. However, in spite of such resistance, according to Holley (2000), when teachers have become familiar with change they do become committed to regular and systematic

change. It seems, therefore, that an understanding of the dynamics of teachers' reactions to curriculum innovation requires the study of the effects of a number of relevant psychological forces. Of these, 'dogmatism'(Rokeach, 2010) comes readily to mind as an important psychological mechanism because according to Rokeach, the dogmatic mind is extremely resistant to change'. Rokeach's analysis of dogmatism rests on the postulated existence in man of two powerful and conflicting sets of motives: the need to know and understand and the need to ward off threatening aspects of reality'. The question then is how do these motives intervene in the moulding of teachers' attitudes to curriculum innovation.

Actually, technology in the classroom is not exclusively beneficial to the students and teachers; it can also be beneficial to parents, particularly in the sense of parent-teacher interaction.

For a variety of reasons, regular physical interaction between parents and teachers is becoming increasingly difficult. However, classroom apps provide one way of tackling this problem. Parent-teacher communication apps help in facilitating teacher responses to the queries from the parents regarding the development of their children. These apps allow parents to message their child's teacher, arrange appointments over an electronic calendar, and even hold video conferences. As teachers, we know that involving the parent in a child's education is an important step to student success, and these apps can help make this a reality in the modern age. In addition to this, there are also classroom apps which allow parents to track their child's progress and how each app is helping their child to improve their skills such as reading and math. Along with tracking progress, there are apps such as those in the Google Suite (Google Docs, Google Sheets, Google Slides) which allow working documents to be shared electronically (they can all be easily brought together through Google Classroom). These can be shared between student and parent for their career to read through and offer advice on when they get the chance.

5.1.4 Students and ICT integration in the competency based curriculum

The study found out that the majority of students have a positive attitude towards ICT and that although only two of them had a laptop; many others have access to Smartphone from their friends within and outside school. This is in agreement with recent investigations of using social media which show that approximately 3 billion individuals worldwide are now communicating

via social media (Iwamoto and Chun, 2020). This growing population of social media users is spending more and more time on social network groupings, as facts and figures show that individuals spend 2 h a day, on average, on a variety of social media applications, exchanging pictures and messages, updating status, tweeting, favoring, and commenting on many updated socially shared information (Abbott, 2017).

Researchers have begun to investigate the psychological effects of using social media on students' lives. Chukwuere and Chukwuere (2017) maintained that social media platforms can be considered the most important source of changing individuals' mood, because when someone is passively using a social media platform seemingly with no special purpose, s/he can finally feel that his/her mood has changed as a function of the nature of content overviewed. Therefore, positive and negative moods can easily be transferred among the population using social media networks (Chukwuere and Chukwuere, 2017). This may become increasingly important as students are seen to be using social media platforms more than before and social networking is becoming an integral aspect of their lives. As described by Iwamoto and Chun (2020), when students are affected by social media posts, especially due to the increasing reliance on social media use in life, they may be encouraged to begin comparing themselves to others or develop great unrealistic expectations of themselves or others, which can have several affective consequences (As cited in Miao-Chen and Xin-Xiao, 2022).

By using ICT to do research and explore more about the world, some students get spoilt as they turn to blue movies. In consonance to this, Aalbers et al. (2018) reported that individuals who spent more time passively working with social media suffered from more intense levels of hopelessness, loneliness, depression, and perceived inferiority. For another, Tang et al. (2013) observed that the procedures of sharing information, commenting, showing likes and dislikes, posting messages, and doing other common activities on social media are correlated with higher stress. Similarly, Ley et al. (2014) described that people who spend 2 h, on average, on social media applications will face many tragic news, posts, and stories which can raise the total intensity of their stress. This stress-provoking effect of social media has been also pinpointed by Weng and Menczer (2015), who contended that social media becomes a main source of stress because people often share all kinds of posts, comments, and stories ranging from politics and economics, to personal and social affairs. According to Iwamoto and Chun (2020), anxiety and

depression are the negative emotions that an individual may develop when some source of stress is present. In other words, when social media sources become stress-inducing, there are high chances that anxiety and depression also develop (As cited in Miao-Chen and Xin-Xiao, 2022).

Understanding the beliefs and concerns of teachers can provide insights into whether curriculum implementation will meet with success or failure. McNeill et al. (2016) and Rakes and Dunn (2015) have all substantiated this notion by addressing the impact of teachers' beliefs about given objectives in science curricula. McNeill et al. (2016) found that teachers' beliefs significantly influence their decisions for instruction. If beliefs play such a vital role, then taking time to learn about teachers' concerns, values, and perceptions should improve the implementation process by proactively addressing these areas (Al-Shabatat, 2014; Rakes &Dunn, 2015). One of McNeill et al.'s (2016) primary recommendations included preparing teachers through PD and collaborative opportunities; specifically, professional development should make sure that teachers fully understand the objectives and receive time to try the new curriculum with a class to support teacher learning. The need for teacher understanding and efficacy when implementing a new curriculum is apparent, especially considering the impact of these factors on student learning.

5.2 Conclusions

The study concludes that the competency based learning which was rolled out in the secondary schools of Uganda in 2020 has not yet been properly appreciated and understood by some teachers especially those in rural areas like Nakasongola. In this curriculum, students are supposed to be at the centre of learning therefore learning is supposed to be learner-centered and the teacher's role is just to facilitate learning. Because of this, many teachers have perceived it to be the role of students to look for, access and use the ICT equipment to research on what teachers ask them to do. They think the learners can do it all, come and present in class before the teacher, thus thinking that students need the ICT more than the teachers. Because of this, many teachers have relaxed on ICT skills acquisition and integration in teaching.

5.3 Recommendations

The researcher recommends that ministry of education and sports has made efforts to supply ICT equipment in many government aided secondary schools, it should as well supply them to private schools since private schools pay taxes to the government and they supplement government efforts in the provision of education to the masses. Secondly, refresher courses are necessary to the teachers regarding how ICT should be integrated in teaching regarding how best teachers and students can do it. These courses should involve both teachers and students since both parties need this knowledge. As well, teachers should be encouraged to ICT facilities in the competency based learning

5.4 Areas for further studies

The current study assessed ICT usage in the competency-based learning. The researcher therefore recommends that further studies be carried out on the influence of ICT in implementing the competency based learning in secondary schools by taking large samples, such as Central Uganda or Eastern Uganda.

REFERENCES

Amone, C. (2021). Ethnic pluralism and the challenge of thematic curriculum implementation in Uganda. Journal of Multilingual and Multicultural Development, 42(1), 52-63.

Atuhurra, J., &Alinda, V. (2017). Basic Education curriculum effectiveness analysis in East Africa: Using the 'Surveys of Enacted Curriculum' framework to describe primary mathematics and English content in Uganda.

Deininger, K. (2003). Does cost of schooling affect enrollment by the poor? Universal primary education in Uganda. Economics of Education review, 22(3), 291-305.

Govender, S. (2018). South African teachers' perspectives on support received in implementing curriculum changes. South African Journal of Education, 38(1).

Makunja, G. (2016). Challenges facing teachers in implementing competence-based curriculum in Tanzania: the case of community secondary schools in Morogoro municipality. International Journal of Education and Social Science, 3(5), 30-37.

Nordberg, T. H., &Andreassen, T. A. (2020). Challenging professional control? Reforming higher education through stakeholder involvement. Journal of Education and Work, 33(2), 169-183.

Pryor, J., Akyeampong, K., Westbrook, J., &Lussier, K. (2012).Rethinking teacher preparation andprofessional development in Africa: An analysis of the curriculum of teacher education in theteaching of early reading and mathematics. Curriculum Journal, 23(4), 409-502.

Read, T., &Enyutu, S. (2005). Road map for the implementation of the curriculum reforms recommended by the primary curriculum review report and approved by the Ministry of Education and Sports. Final revised version, Kampala.

Ssentanda, M., Southwood, F., &Huddlestone, K. (2019). Curriculum expectations versus teachers' opinions and practices in teaching English in rural primary schools in Uganda. Language Matters, 50(2), 141-163

Baughman, Jacqulyn A.; Brumm, Thomas J.; Mickelson, Steven K. (2012)."Student Professional Development: Competency-Based Learning and Assessment". The Journal of Technology Studies.**38** (1/2): 115–127.

Burns, Richard W.; Klingstedt, Joe Lars (1972)."Introduction to Competency-Based Education".Educational Technology.**12** (11): 9–10. JSTOR 44419593.

Kasule, G. W. (2015). Professional development on innovation competence of teaching staff in Ugandan universities Doctoral dissertation, Wageningen University.

Kleickmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., &Baumert, J. (2013). Teachers‟ content knowledge and pedagogical content knowledge: The role of structural differences in teacher education. Journal of Teacher Education, 64(1), 90-106.

Oblinger, D. (2004). The Next Generation of Educational Engagement.*Journal of Interactive Media in Education* 8, 1–18.

Rosenshine, B. (1995). Advances in research on instruction.*Journal of Educational Research*, 88(5), 262– 268.

Center for Applied Special Technology (2011).Universal Design for Learning Guideline, version 2.0. Wakefield, MA: Author.

Rose, D. H., and A. Meyer (2002). *Teaching Every Student in the Digital Age*. Alexandria, VA: Association for Curriculum Development.

Kyobe, E., &Rugumayo, A. (2005). Competency based education and training (CBET): a case study in Uganda.

Malunda, P. N. (2018). Teacher Professional development and quality of secondary school teachers in Uganda.

Nakabugo, M. G., Bisaso, R., &Masembe, C. S. (2011). The continuum of teacher professional development: Towards a coherent approach to the development of secondary school teachers in Uganda. Makerere University.

National Curriculum Development Centre-NCDC (2020).Lower secondary curriculum reform.NCDC. Kampala. Author.

Rivenbark, William C.; Jacobson, Willow S. (2014). "Three Principles of Competency-Based Learning: Mission, Mission, Mission". Journal of Public Affairs Education.**20** (2): 181–192.

Abbott, J. (2017). Introduction: Assessing the social and political impact of the internet and new social media in Asia. J. Contemp. Asia 43, 579–590

Alahmar, A. T. (2016). The impact of social media on the academic performance of second year medical students at College of Medicine, University of Babylon, Iraq.J. Med. Allied Sci.6, 77–83.

Banjanin, N., Banjanin, N., Dimitrijevic, I., and Pantic, I. (2015). Relationship between internet use and depression: Focus on physiological mood oscillations, social networking and online addictive behavior. Comp. Hum. Behav. 43, 308–312.

Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., and Lindsey, R. A. (2017). Adolescent social media use and mental health from adolescent and parent perspectives. J. Adolesc.61, 1–11.

Miao-Chen and Xin-Xiao (2022).The effect of social media on the development of students' affairs. Educational Psychology: Volume 13.

APPENDICES

APPENDIX A: Table for Determining Sample Size for A Population of A Given Size

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	131
40	36	280	102	1800	317
45	40	290	105	1900	320
50	44	300	109	200	322
55	48	320	175	2200	327
60	52	340	181	2400	331
70	59	380	191	2800	338
75	63	400	198	3000	341
80	66	420	201	350	346
85	70	440	205	4000	351
90	70	440	205	4000	351
95	76	480	214	5000	357
100	80	500	217	6000	361
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	361
140	103	700	248	10000	370
150	198	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	750000	382
210	136	1100	285	100000	384

Not: N= Population size

S= Sample size

Source: Krejcie and Morgan (1970)

APPENDIX B: QUESTIONNAIRE

SECTION C: QUESTIONNAIRE FOR TEACHERS

You are kindly requested to indicate the extent to which you agree with the items below using the scale where, I = Strongly Disagree, 2= Disagree, 3= Agree and 4= Strongly Agree.

1.	**ICT Equipment**	**SD**	**D**	**A**	**SA**
		1	2	3	4
	Programmable calculator is available				
	Internet connectivity.				
	Network devices: Switch, router, wireless access point, server, and crimping tools				
	Teachers have laptops				
	Projector				
	Broadcasting technology: Television Printer and scanner are available in the school				
	Radios are available in the school.				
	There is reliable power supply in the school				
	crimping tools are available				
	digital camera,				
	Billing machine or simulator is available				
2.	**Teachers capacity to integrate ICT in the competency-based curriculum**				
	I know how to use a computer while teaching				
	I use Spread sheet programming				
	Iam able to use Computer aided instruction& computer mediated conferencing, video/audio conferencing				
	I use Data bases for information storage				
	I know how to use Graphing software to prepare learning resources				
	Iam able to use Digital libraries , e-books				
	Lam able to use Microsoft publishing -news letter, poster, brochure				

	I use Smartphone to do assignments				
3	**Teacher's perception of using ICT in the competency-based curriculum**				
	Smart mobile phones are necessary while teaching				
	Internet use in the learning process is good				
	The use of ICT in the competency based curriculum promotes competencies like creativity, communication, critical thinking, collaboration, citizenship and connectivity for the future education				
	The use of ICT in the competency based curriculum promotes generic skills like communication, learning to learn etc				
	The use of ICT in the competency based curriculum promotes the morals of learners				
	The use of ICT in the competency based curriculum promotes Online data sharing platforms				

SECTION C: QUESTIONNAIRE FOR STUDENTS

You are kindly requested to indicate the extent to which you agree with the items below using the scale where, I = Strongly Disagree, 2= Disagree, 3= Agree and 4= Strongly Agree.

1.	**ICT Equipment**	**SD**	**D**	**A**	**SA**
		1	2	3	4
	Programmable calculator is available				
	Internet connectivity.				
	Network devices: Switch, router, wireless access point, server, and crimping tools				
	Teachers have laptops				
	Projector				
	Broadcasting technology: Television Printer and scanner are available in the school				
	Radios are available in the school.				
	There is reliable power supply in the school				

	crimping tools are available				
	digital camera,				
	digital camera,				
	Billing machine or simulator is available				
2.	**Students' capacity to integrate ICT in the competency-based curriculum**				
	I know how to use Graphing software to prepare learning resources				
	Iam able to use Digital libraries , e-books				
	Lam able to use Microsoft publishing -news letter, poster, brochure				
	I use Smartphone to do assignments				
	I use internet on the computer to do assignments				
	I use e-mail to communicate with others				
	I use Data bases for information storage				
3	**Students' attitude towards using ICT in the competency-based curriculum**				
	Smart mobile phones are necessary while teaching				
	Internet use in the learning process is good				
	The use of ICT in the competency based curriculum promotes competencies like creativity, communication, critical thinking, collaboration, citizenship and connectivity for the future education				
	The use of ICT in the competency based curriculum promotes generic skills like communication, learning to learn etc				
	The use of ICT in the competency based curriculum promotes the morals of learners				
	The use of ICT in the competency based curriculum promotes Online data sharing platforms				

APPENDIX C: INTERVIEW GUIDE

FOR **TEACHERS**

1. Based on what you observe in this school, what ICT facilities are available in this school?.....
   .....
   .....
   .....
2. (a) As a teacher, do you have the capacity to integrate ICT in the competency-based curriculum while
   teaching?.....
   .....
   .....
   (b) How do you do
   it?.....
   .....
   .....
3. As a teacher, how do you perceive using ICT in the competency-based curriculum as you are
   teaching?.....
   .....
   .....

INTERVIEW GUIDE TO STUDENTS

1. Based on what you observe in this school, what ICT facilities are available in this school?.....
   .....
   .....
   .....

2. As a student, what is your attitude towards the use of ICT in the competency-based
   curriculum?.....

.....

.....

3. What ICT materials do you have which enable you to incorporate ICT in the competency based curriculum?.....

.....

.....

.....

4. Do you have the capacity to use them?.....

.....

(b) how?.....

.....

.....