

**NEW LOWER SECONDARY SCHOOL CURRICULUM AND
TECHNOLOGY INTEGRATION AT O'LEVEL,
A CASE STUDY OF MUSANA VOCATIONAL
HIGH SCHOOL.**

**BY
MUGENI MOREEN
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**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF LANGUAGES
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Statement of Declaration:

I **MUGENI MOREEN** declare that this research report on **New lower secondary school curriculum and Technology integration at O-level, a case study of Musana vocational high school**. is my original work, and the content has not partially or wholly been presented for an academic award by any person in any University or Institution of Higher Learning.

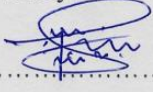
Signature.....

Name: **MUGENI MOREEN**

DATE.....12th/8/2024.....

Endorsement by Supervisor:

This research proposal has been prepared under my supervision upon appointment by Busitema University.

Signature.....

Name: **DR TENDO SHIRA**

DATE.....12/08/2024.....

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I recognize and cherish my supervisor for this research, Dr. Tendo Shira whose help through guidance, advice and kindness propelled the success of this research as well as the whole Language department of Busitema University, Nagongera campus.

Exceptional thanks go to my parents (Mr. Bwire Godfrey John and Mrs. Nabirye Harriet) who without second thought sponsored my whole course for this Bachelor's Degree. May the Almighty bless you.

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I express sincere gratitude to all the people that were involved in this study either as respondents or helped in the data collection process at any point of this research.

DEDICATION

This is dedicated to my beloved parents (Mr. Bwire Godfrey and Mrs. Nabirye Harriet), beloved siblings, and my dearest friends for their unconditional support, love, care and guidance up to date, as well as my course-mates for their support in the different ways which has seen me make it through this course. I can only pray to the lord to bless you abundantly.

SUMMARY

It is commonly believed that learning is enhanced through the use of technology and that students need to develop technology skills in order to be productive members of society. For this reason, providing a high-quality education includes the expectation that teachers use educational technologies effectively in their classroom and that they teach their students to use technology in new lower secondary school curriculum. The study was organized in different views of technology integration in new lower secondary school curriculum:

The knowledge teachers have on technology integration at ordinary level in new curriculum.

Challenges in Technology Integration in new lower secondary school curriculum.

The challenges of integrating technology in Ugandan schools are multifaceted. One significant issue is the lack of infrastructure, including insufficient access to reliable electricity and internet connectivity (Ekirikubinza & Ssempala, 2021). Many rural schools operate without the basic technological infrastructure necessary for integrating ICT into the curriculum. Additionally, the cost of acquiring and maintaining technological equipment is prohibitively high for many schools (Trucano, 2005).

Teacher preparedness is another critical challenge. Many teachers in Uganda have limited experience and training in using technology for educational purposes (Hennessy, Harrison, & Wamakote, 2010). This lack of professional development opportunities hinders the effective use of technology in the classroom. Furthermore, there is often a resistance to change among educators who are accustomed to traditional teaching methods and may feel intimidated by new technologies (Unwin, 2005).

Within these categories, I describe findings related to one-to-one computing initiatives, integration of open educational resources, ethical issues affecting technology use, importance of technology in education sector and ways to increase technological tools to facilitate learning, and the need for systemic educational change to fully realize technology's potential for improving learning. From my analysis of the study in this school, I conclude that the primary benefit of current technology use in education has been to increase information access and communication. Students primarily use technology to gather, organize, analyze, and report information, but this has not dramatically improved student performance on standardized tests.

This study was descriptive in nature and it included qualitative research was collected through questionnaires that were administered to students and teachers

These findings will lead to the conclusion that future efforts should focus on providing students and teachers with increased access to technology along with training in pedagogically sound best practices, including more advanced approaches for technology-based assessment and adaptive instruction in Musana vocational high school.

Table of Contents

Statement of Declaration:	Error! Bookmark not defined.
Endorsement by Supervisor:	Error! Bookmark not defined.
ACKNOWLEDGEMENT	ii
DEDICATION	iii
SUMMARY	iv
CHAPTER ONE	1
INTRODUCTION AND BACKGROUND OF STUDY	1
1.0 Introduction.....	1
1.1 Defining Technology.....	2
1.1.1Defining technology integration.	2
1.2 Background to the study	2
1.3 Problem statement.....	4
1.4 Purpose of the study	5
1.6 Significance of the Study	6
1.7 Objective of the study	6
1.8 Research questions.....	6
CHAPTER TWO	7
LITERAURE REVIEW.....	7
2.0 Introduction.....	7
2.0.1 Objective I. To evaluate the extent of technology integration in new lower secondary curriculum.	7
2.0.2 Objective 2. To identify Barriers for effective ICT integration.....	11
2.0.3 Objective iii. To analyze teacher preparedness and training needs.....	15
CHAPTER THREE.....	17
METHODOLOGY	17
3.0 Introduction.....	17
3.1 Research Method	17
3.2.1 Population	17
3.2.2 Sample size	17
3.3 Sampling criteria.....	17
3.4 Data collection methods.....	18
3.5 Research instruments	18
3.6 Validity and reliability of the methods proposed	19
3.7 Ethical considerations in the study.....	20
3.8 Limitation of the study	20
3.8.1 The geographical limitation	20

3.8.2 Content limitations:.....	20
3.8.3 Limitations on the scale of impact:	20
CHAPTER FOUR.....	21
PRESENTATION OF FINDINGS	21
4.0 Introduction.....	21
4.1 Presentations of findings	21
CHAPTER FIVE	24
Discussion, Conclusion and Recommendations	24
5.0 Introduction.....	24
5.1 Discussion of Findings.....	24
5.1.1 Specific objective I:	24
5.1.2 Specific objective II: To identify barriers for effective ICT integration.	26
5.1.3 Specific objective III: To analyze teacher preparedness of technology integration.	28
5.2. Conclusions and Recommendations	30
5.2.1. Conclusions.....	30
5.2.2 Recommendations.....	30
References.....	32
APPENDICES	36

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF STUDY

1.0 Introduction.

This study investigated technology integration in new lower secondary school curriculum, a case study in Musana Vocational High School.

This chapter provides insight into background to the study, problem statement, purpose of the study, aim of the study, objectives of the study, research questions and how the report is structured.

The integration of technology in the education system in Uganda has been steadily growing in recent years and the government has been working to incorporate technology into schools to improve access to quality education and hence learning outcomes for the students. The initiative is the implementation of the National and communication policy, which aims to provide guidelines for integrating information and communication technology into ordinary level of education which includes equipping schools with computer labs, providing software and education resources and teacher training skills.

As a result, recent efforts to identify appropriate and effective uses for technology have focused more on the pedagogically sound use of technology to accomplish specific learning objectives (see for example, Koehler & Mishra, 2008). To better orient our understanding and evaluation of technology integration efforts at both classroom and individual levels, integration might best be viewed as progressive steps toward effective use of technology for the purposes of improving instruction and enhancing learning. The current status of technology integration efforts could then be evaluated by the degree to which teachers and students (1) have access to educational technologies, (2) use technology for instructional purposes, and (3) implement technology effectively to facilitate learning (Davies, 2011). After first defining technology and technology integration, this chapter uses this framework for understanding and evaluating current technology integration efforts in schools, along with the challenges associated with technology integration.

1.1 Defining Technology

Efforts to describe and critique current use of technology must recognize that not everyone shares a common understanding of what technology is and what technology integration means. For many, technology is synonymous with computer equipment, software, and other electronic devices (U.S. Department of Education, 2010; Woolfe, 2010). Technology simply as electronic devices tend to place an unwarranted emphasis on using digital technologies in schools Davies & West regardless of the merits for doing so (Davies, Sprague, & New, 2008). I consider educational technology to be any tool, piece of equipment, or device or electronic or mechanical that can be used to help students accomplish specified learning goals. Educational technology includes both instructional technologies, which focus on technologies teachers employ to provide instruction, and learning technologies, which focus on technologies learners use to accomplish specific learning objectives.

1.1.1 Defining technology integration.

Technology integration means having and using this equipment in the classroom. Interpreting technology integration to mean simply having access to computers, computer software, and the internet has led critics to identify the mandate to integrate technology into schools as a simplistic solution to a complicated endeavor (Bahrapour, 2006; Cuban, 2006a; Warschauer & Ames, 2010). However, most technology integration efforts do intentionally focus on attempting to establish innovative and creative best practices as they progress in gaining access to new and developing digital technologies (ISTE, 2008; Woolfe, 2010). For this analysis I define technology integration as the effective implementation of educational technology to accomplish intended learning outcomes.

1.2 Background to the study

The Elementary and Secondary Education Act of 2001 mandated an emphasis on technology integration in all areas of K-12 education, from reading and mathematics to science and special education (U.S. Department of Education, 2002). This mandate was reinforced in the U.S. Department of Education's (2010) National Education Technology Plan. Under current legislation, education leaders at the state and local levels are expected to develop plans to effectively utilize educational technologies in the classroom. The primary goal of federal education legislation is to improve student academic achievement, measured primarily by student performance on state standardized tests. Secondary goals include the expectation that every student become technologically literate, that research-based technology-enhanced

instructional methods and best practices be established, and that teachers be encouraged and trained to effectively integrate technology into the instruction they provide.

The directive to integrate instructional technology into the teaching and learning equation results from the following fundamental beliefs: (1) that learning can be enhanced through the use of technology and (2) that students need to develop technology skills in order to become productive members of society in a competitive global economy (McMillan-Culp, Honey, & Mandinach, 2005; U.S. Department of Education, 2010). By most measures, the quality and availability of educational technology in schools, along with the technological literacy of teachers and students, have increased significantly in the past decade (Center for Digital Education, 2008; Gray, Thomas, & Lewis, 2010; McMillan-Culp, Honey, & Mandinach, 2005; Nagel, 2010; Russell, Bebell, O'Dwyer, & O'Connor, 2003).

In recent years, the global push towards integrating technology in education has been driven by the recognition that digital literacy is a critical component of contemporary education. Technological advancements offer significant potential to transform teaching and learning processes, making them more interactive, engaging, and effective (Voogt, Knezek, Cox, Knezek, & Brummelhuis, 2013). In developed countries, technology integration in schools is often characterized by the widespread availability of digital tools, robust internet connectivity, and comprehensive training programs for teachers (Anderson & Dexter, 2005). However, in developing countries like Uganda, the landscape is markedly different.

Uganda's Educational Context

Uganda's educational system is guided by the National Development Plan and the Uganda Vision 2040, which emphasize the role of education in national development (National Planning Authority, 2013). The Ministry of Education and Sports (MoES) has initiated several reforms to enhance the quality of education, including the integration of Information and Communication Technology (ICT) in schools (MoES, 2020). Despite these efforts, the integration of technology in Ugandan schools faces numerous obstacles, particularly in rural areas.

New Lower Secondary School curricula

In 2020, the National Curriculum Development Centre (NCDC) of Uganda introduced a new lower secondary school curriculum aimed at improving the quality of education and aligning it with modern educational needs and global standards. This curriculum emphasizes

competency-based learning, critical thinking, and the practical application of knowledge (NCDC, 2020). One of the key components of the new curriculum is the integration of ICT as a core subject and as a tool to enhance learning across various subjects.

The new curriculum includes provisions for equipping schools with the necessary technological infrastructure and training teachers to effectively use ICT in their teaching practices. The curriculum is designed to foster digital literacy among students, preparing them for the demands of the 21st-century workforce (NCDC, 2020). However, the implementation of this curriculum has highlighted significant disparities between urban and rural schools, with rural schools like Musana Vocational High School facing unique challenges.

In addition, educators are generally committed to Davies & West technology use. Most educational practitioners value technology to some degree, yet many researchers and policy analysts have suggested that technology is not being used to its full advantage (Ertmer & Ottenbreit-Leftwich, 2010; Bauer & Kenton, 2005; Overbaugh & Lu, 2008; Woolfe, 2010). Even at technology-rich schools, effective integration of technology into the instructional process is rare (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010).

1.3 Problem statement

Despite the recognized importance of technology in education, many schools in Uganda, particularly in rural areas, face significant challenges in integrating technology into their curricula. Musana Vocational High School in Iganga district exemplifies these issues. The school's efforts to implement the new lower secondary school curriculum, which emphasizes Information and Communication Technology (ICT), have encountered several obstacles.

One major problem is the limited access to technological resources. Rural schools like Musana often lack basic infrastructure such as reliable electricity and internet connectivity, essential for effective technology integration (Ekirikubinza & Ssempala, 2021). Additionally, the high cost of acquiring and maintaining technological equipment further complicates the situation.

Another critical challenge is the inadequacy of teacher training. Many teachers in rural Uganda have limited experience and training in using ICT, hindering their ability to integrate these tools into their teaching practices effectively (Hennessy, Harrison, & Wamakote, 2010).

This lack of professional development opportunities results in a significant gap between the curriculum's expectations and the teachers' abilities.

Socio-economic factors and cultural attitudes towards technology also slow ICT adoption in education. Resistance to change among educators and communities accustomed to traditional methods, along with limited exposure to technology for students from low-income families, further widen the digital divide (Unwin, 2005).

This study aims to explore and understand the specific barriers to technology integration at Musana Vocational High School. By identifying the successes and challenges encountered, the research seeks to provide actionable recommendations for improving technology use in similar educational settings, contributing to the broader discourse on educational technology in developing countries.

The parliamentary committee on ICT recently passed a resolution on the Ministry of Education and sports recommending the equipping all government aided secondary schools with computers to involve in ICT initiatives that are coming up like learning of students. The support needed to have Technology integration in Uganda is mainly technology infrastructure development and setup, increase of resource persons in digital material production and financial clout to afford the development, production and implementation of technology integration

1.4 Purpose of the study

The purpose of this study is to investigate how Musana Vocational High School has integrated technology into its new lower secondary school curriculum. This research aims to identify the successes and challenges encountered during this integration process and to provide recommendations for improving technology integration in similar educational settings. By examining a specific case, this study hopes to contribute to the broader discourse on educational technology in developing countries and to inform policy and practice in Uganda and beyond.

1.5 Aim of the study.

The aim of this study is to investigate the integration of technology into the new lower secondary school curriculum at Musana Vocational High School in Iganga, Uganda, to inform effective strategies for technology integration in rural educational settings.

1.6 Significance of the Study

The findings from this study are expected to provide valuable insights into the practical aspects of integrating technology into secondary education in a rural Ugandan context. This is particularly important as Uganda continues to strive towards achieving its educational goals as outlined in the Uganda Vision 2040 and the Sustainable Development Goals (SDGs) (Uganda Vision 2040, 2013). By understanding the specific challenges and successes at Musana Vocational High School, policymakers, educators, and stakeholders can develop more effective strategies for technology integration that are tailored to the unique needs of rural schools in Uganda

1.7 Objective of the study

This study was guided by the following specific objectives.

- I. To evaluate the Extent of ICT Integration in New lower secondary school curriculum
- II. To identify Barriers for effective ICT integration.
- III. To analyze teacher preparedness and training needs.

1.8 Research questions.

1. How has Musana Vocational High School integrated technology into its new lower secondary school curriculum?
2. What are the barriers faced during the integration of technology at Musana Vocational High School?
3. How have teachers prepared and trained for integration of technology in lower secondary school curricula in rural Ugandan schools?

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

This chapter contains the review of related literature to technology integration in English language classroom at O' level, a case study of Musana vocational high school.

Technology Integration in Education

Technology integration in education involves the use of technological tools and resources to enhance the teaching and learning process. Effective integration requires more than just the availability of technology; it involves the thoughtful incorporation of these tools into the curriculum, instruction, and assessment practices (Hughes, 2005). Studies have shown that when technology is effectively integrated, it can lead to improved student engagement, enhanced learning outcomes, and better preparation for the digital age (Law, Pelgrum, & Plomp, 2008).

It is arranged with literature related to specific objective, objective 1, objective 2, objective 3.

2.0.1 Objective I. To evaluate the extent of technology integration in new lower secondary curriculum.

The use of English has been increased in popularity and so has the need for qualified teachers to instruct students in the language. It is true that there are so many numbers of teachers who already use or implementing the technology. But, for the bad news, the majority of teachers are still teaching through the traditional manner. Actually, there is none of the traditional manners are considered as a bad or maybe potentially damaging the students. Because in reality, the fact is, till these days they are also proves as a still useful manner. However, there are so many more opportunities for students to gain more practice confidence and develop themselves, especially for ESL students, moreover to those who learn the language for more than just fun. For those type of ESL students, the keep pace with ELT and to have more confidence they have to stride into the world of multimedia technologies.

Technology in English Teaching to Improve Students' Interest and Teaching Effect In these days, the traditional styled teaching methods & environment are so much more unpopular while multimedia technology featuring audio, visual animation effects naturally and effectively make us have more access to information. With such characteristics as abundant information and crossing time and space, multimedia technology offers a sense of reality and

functions very well, which greatly processes and improves students' interest and motivation in study and their involvement in class activities.

Since there is a countless online resource, technology is really able to help the teaching and learning process to be improved. Teachers can be able and may use different apps or trusted online resources to enhance the traditional ways of teaching and to keep students more engaged. Virtual lesson plans, grading software and online assessments can help teachers save a lot time.

This valuable time can be used for working with students who are struggling. What is more, having virtual learning environments in schools enhances collaboration and knowledge sharing between teachers.

The following are the kind of technology teachers use in teaching in new curriculum.

1. Interactive multimedia

Technology helps make it easy to combine several media including text, graphics, audio, video, and animation, to become computer program applications. Multimedia can usually be found on websites.

2. Television

Television is a system for converting visual images with sounds into electronic signals, transmitting them by radio or other means, and displaying them electronically on the screen.

3. Computer

Computer or Personal Computer (PC) is an electronic device which is capable of receiving data information and performing a sequence of logical operations in following with a predetermined but variable set of procedural instructions program to produce a result in the form of information or signals.

4. Sound system

A Sound system that is usually found in one part a computer device. Sound systems are combined into one with a laptop, besides that there is also a separate device. The various types of Technology have shaped the way teachers teaching English and of types of Technology that have been used to language laboratory is one of the types of Technology provide language learners. The use of ICT making language teaching more exciting, teachers

believe can't be separated with the success of teaching and learning activities. Types of Technology either non-web-based or web-based, they facilitate language learning, teaching language.

The variety of so many and different media and technology that can be used to obtain information and knowledge can be classified into non-projected media like photographs, diagrams, exhibition materials and models. Media that can be projected, audio media such as cassettes, compact disc (CD) audio that contains recordings, sources and recordings of music. Media motion pictures or video media such as VCD, DVD, computer-based learning, multimedia and computer networks. All these varieties have their own characteristics in conveying information and knowledge to the learners, especially in the process of teaching and learning processes like audio medium is usually used for training and developing ability to hear and understand information through the element of sound especially in learning English for example audio medium can be used to practice pronunciation and a learner's ability to understand a verbally expressed story known as comprehension listening.

English Learning Apps

1. Quipper School

Quipper is an online platform/application that we can all use for free for teaching and learning English as a foreign Language. Quipper also known as equipper school, is a web-based online learning application. Quipper provides the teachers and the students used web-based learning application to supports via virtual storage that allows them upload and keep their PowerPoint presentations, PDF files, pictures, and online video. This application also can be able to helps teachers for monitoring their students' learning without encountering of time. As a web-based learning platform, in Quipper, teachers can develop learning materials that are of course being enriched by visual and audio media, like text with its illustration, pictures, videos or even other multimedia resources.

2. A Capela Group

A Capela group is an application that can makes it so easy for English teachers to help them to develop their students' ability in Listening skills. Teachers typing Acapella sentences will process these sentences into the sounds we want. A Capela helps the teachers to makes it easy for them to teach different listening and pronunciation between the British version of English

and also the American version of English. By using A Capela, the teachers also can be able to choose the desired speaker accent and gender.

3. E-book

The students can be able to improve their skills by using E-book. Or while listening to music through students assigned to read books on the bookrack and they will read while listening to music in accordance with the storyline of the book and the teacher can also assign students to create stories in the bookrack and design their own music, they like other than to read the skills of this platform can also be used in writing skills. Teach different listening and pronunciation between British English and American English and choose the desired speaker accent and gender. using E-book students can improve their skills and abilities in reading or while listening to music through students assigned to read books on the book rack and they will read while listening to music in accordance with the storyline of the book and the teacher can also assign students to create stories in the bookrack and design their own music, they like other than to read the skills of this platform can also be used in writing skills. this application can be downloaded in play store.

4. Google Classroom

Google Classroom is absolutely considered as one of the best platforms out there for improving teachers work flow because it does provide a set of so many useful and effective features that make it an ideal application to be used by the teachers. The benefit of using google classroom is that the teachers can be able to manage and create or even collect the assignment from the students that has been given by the teachers before. Also, the teachers can be able to spend more time for the student and less time on the paperwork. There are several English learning applications like YouTube, Twitter, podcasting, Skype that can be used by the teachers and the students for their teaching & learning activity.

a) YouTube

YouTube is an online platform/application of variety videos. We all can be able to access YouTube from our Personal Computer (PC), laptop or even also through mobile phone. The teachers are usually using YouTube to display the material in English learning. YouTube videos can be used in English language teaching for various aspects of English to improve vocabulary, accents, pronunciation and many others, the teacher can be able to choose a part or show the students some of videos according to the students' needs. In the classroom the

teachers use YouTube to select a video or maybe some videos, and then they will eventually ask the student to narrate by making video like in YouTube to improve their skills of speaking ability.

b) Twitter

Twitter is a social networking application that could help as online education technology tool, the teachers can use a dozen activities for using an online education technology tool to engage students in classroom activities. Twitter can also be used listening to music in accordance with the storyline of the book and the teacher can also assign students to create stories in the bookrack and design their own music they like other than to read the skills of this platform can also be used in writing skills. Teach different listening and pronunciation between British English and American English and choose the desired speaker accent and gender.

Using E-book students can improve their skills and abilities in reading or while listening to music through students assigned to read books on the bookrack and they will read while listening to music in accordance with the storyline of the book and the teacher can also assign students to create stories in the bookrack and design their own music, they like other than to read the skills of this platform can also be used in writing skills. this application can be downloaded in play store or i-store

2.0.2 Objective 2. To identify Barriers for effective ICT integration.

In developing countries, the integration of technology in education is often hampered by various challenges. These include limited access to electricity and internet connectivity, inadequate technological infrastructure, and a lack of trained teachers (Trucano, 2005). Additionally, socio-economic factors and cultural attitudes towards technology can also influence the effectiveness of technology integration (Unwin, 2005). In Uganda, these challenges are pronounced, particularly in rural areas where resources are scarce, and schools often struggle to meet basic educational needs (Ekirikubinza & Ssempala, 2021).

The challenges of integrating technology in Ugandan schools are multifaceted. One significant issue is the lack of infrastructure, including insufficient access to reliable electricity and internet connectivity (Ekirikubinza & Ssempala, 2021). Many rural schools operate without the basic technological infrastructure necessary for integrating ICT into the

curriculum. Additionally, the cost of acquiring and maintaining technological equipment is prohibitively high for many schools (Trucano, 2005).

Musana Vocational High School, located in Iganga district, provides a compelling case study for examining the integration of technology in a rural Ugandan school. The school has recently implemented the new lower secondary school curriculum that emphasizes the use of technology in teaching and learning. This curriculum aims to equip students with essential digital skills and enhance their overall learning experience.

The case of Musana Vocational High School is particularly relevant because it reflects the broader challenges and opportunities associated with technology integration in rural Ugandan schools. By focusing on this specific context, the study aims to uncover practical insights and strategies that can inform policy and practice in similar educational settings across the country.

Teacher preparedness is another critical challenge. Many teachers in Uganda have limited experience and training in using technology for educational purposes (Hennessy, Harrison, & Wamakote, 2010). This lack of professional development opportunities hinders the effective use of technology in the classroom. Furthermore, there is often a resistance to change among educators who are accustomed to traditional teaching methods and may feel intimidated by new technologies (Unwin, 2005).

Government and Policy Initiatives

Recognizing these challenges, the Ugandan government has implemented several initiatives aimed at promoting ICT in education. The Education and Sports Sector Strategic Plan (ESSP) 2020/21-2024/25 outlines specific strategies for improving ICT infrastructure and providing teacher training in ICT (MoES, 2020). Additionally, the Uganda Communications Commission (UCC) has supported various projects to enhance internet connectivity in schools, particularly in rural areas (UCC, 2018).

Despite these initiatives, the impact on the ground has been uneven. While some urban schools have made significant strides in integrating technology, many rural schools continue to lag behind. This disparity underscores the need for targeted interventions that address the unique challenges faced by rural schools in Uganda.

Addressing Educational Inequities

One significant aspect of this study is its potential to highlight and address the educational inequities between urban and rural schools. By focusing on a rural school like Musana Vocational High School, the research aims to shed light on the specific barriers to technology integration that rural schools face, including limited infrastructure, lack of trained personnel, and financial constraints (Ekirikubinza & Ssempala, 2021). Identifying these barriers and understanding how they impact the implementation of the new curriculum can help in formulating targeted interventions to bridge the gap between urban and rural education.

Enhancing Teacher Preparedness

Another critical significance of this study lies in its focus on teacher preparedness. Effective technology integration in education requires teachers who are not only proficient in using technological tools but also capable of integrating these tools into their teaching practices in meaningful ways (Hennessy, Harrison, & Wamakote, 2010). This study will examine the training and support provided to teachers at Musana Vocational High School, identifying areas where additional resources and professional development are needed. Insights from this research can inform the design of teacher training programs that better equip educators to utilize technology in the classroom.

Policy Implications

The results of this study could have important policy implications. By providing a detailed analysis of the integration process at Musana Vocational High School, the study aims to offer evidence-based recommendations for policymakers. These recommendations can help in refining national strategies for ICT integration in education, ensuring that they are responsive to the challenges faced by schools in diverse contexts across Uganda. Additionally, the study can contribute to the global body of knowledge on technology integration in education, offering lessons and best practices that can be adapted in other developing countries with similar educational challenges. Technology integration in new lower secondary school curriculum faces a variety of challenges for example,

Technical difficulties

Schools nowadays use smartboards and other digital devices for teaching in classrooms. However, these smartboards and devices are prone to frequent technical glitches- a software

glitch or a mysterious error message. It disrupts the flow of the class and causes frustration among teachers.

Lack of proper training & support

Due to a lack of training and support, teachers resist ICT integration in teaching. When proper training regarding the use of educational technology isn't provided to teachers, they are more likely to postpone its use.

Outdated content

Another challenge of educational technology is the outdated and irrelevant e-learning content. This disincentivizes teachers to use technology in the classroom. It creates an unnecessary burden on them as they are forced to refer to textbooks to deliver quality lessons. Referring to different resources for teaching results in a lot of time wastage. It also impacts their ability to make the learning process engaging and interactive.

Lack of real-life examples

Students learn concepts better when they are given real-world examples that are relevant to their lives. Without these examples, it can be challenging for teachers to demonstrate the practical applications of the knowledge to their students.

Teachers may be hesitant to use e-learning content that lacks real-life examples, especially if they are unfamiliar with how to bridge the gap between theoretical knowledge and real-world applications. Poor internet connection

Poor internet connectivity is one of the major challenges of educational technology for teachers, especially in rural and semi-urban areas. It is not possible to integrate ICT in teaching if there is a lack of proper internet connection in educational institutions. It costs a teacher a lot of time and effort to deal with frequent interruptions in connections.

Lack of proficiency in English

Almost all educational applications and software are available in the English language. Language barriers may prevent teachers from using technology in areas where English is not the dominant language, especially in backward areas. Thus, teachers with limited English proficiency may not be able to benefit from these edtech tools.

Lack of digital literacy

Lack of digital literacy among teachers hinders their ability to use digital teaching material and hampers the learning process. They lack the skills required to set up and use edtech tools. They also face difficulty in understanding the features and use of such tools. A lack of digital literacy can make it difficult for teachers to solve technical problems quickly, resulting in reluctance to use technology in teaching.

Lack of adequate infrastructure

Integration of educational technology in the classroom requires basic infrastructure like electricity, internet connectivity, smartboards, computers, etc. Unfortunately, a lot of educational institutions don't have this basic infrastructure in place due to limited funding, making it tough for teachers to make effective use of technology in classrooms. This is especially true for government schools and educational institutions that are located in rural areas.

Lack of flexibility

This is one of the most important challenges of educational technology. Teachers adapt their teaching style and language of instruction according to the individual needs of the students. They customize the lessons according to a student's level of understanding and knowledge. This ensures a better learning outcome. However, edtech tools don't provide the same level of flexibility, which makes teachers hesitant to use technology in classrooms.

Digital divide

Teachers are not able to use educational technology when students don't have access to digital devices like laptops, internet, etc. It leads to a missed opportunity for students who don't have access to technology and leads to a rise in inequality. They are not able to complete their online assignments and other learning activities, leading to an adverse impact on their learning outcomes. This deters teachers from adopting edtech tools for teaching.

2.0.3 Objective iii. To analyze teacher preparedness and training needs.

Technology pedagogical knowledge is the knowledge of existence and capabilities of various technologies that are used in teaching and learning setting and knowing how teaching can transform when using particular technologies.

Teacher knowledge on technology integration refers to the understanding and skills that educators have in effectively incorporating technology into their teaching practices. This includes using various digital tools, resources, and platforms to enhance student learning and engagement. Teachers who are knowledgeable about technology integration are better equipped to create interactive and innovative learning experiences for their students both inside and outside the classroom.

Pedagogical content knowledge (PCK) has long been discussed as crucial for effective teachings (Shulman, 1986). Effective educators must not only be domain experts, but also understand how to flexibly use the affordances of different pedagogies for particular content topics. With the advent of numerous novel technologies over the past decades, educators have an abundance of technologies to leverage to make their teaching more effective. Although the potential benefits are clear, the sheer number of possible combinations of technologies and pedagogies for different tasks and students is overwhelming. The TPACK framework expands on the focus of PCK to also include technology as a knowledge domain (Mishra & Koehler, 2006). TPACK focuses on technology, pedagogy, and content knowledge individually, and also on their interactive combinations; this leads to a sum of seven types of knowledge that TPACK supporters argue are crucial for ideal integration: content knowledge, pedagogical knowledge, technological knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge.

CHAPTER THREE

METHODOLOGY

3.0 Introduction.

In this chapter, the Research method, study area, study population, sampling criteria, research tools and instruments, data analysis, validity and reliability of the methods proposed ethical consideration in the study and limitation of the study are explained.

3.1 Research Method

The study was adopted as a qualitative research design to undertake the study of technology integration in New Lower secondary school curriculum at Musana Vocational High school.

3.2 Study population and sample size

This study was conducted in Musana Vocational High School in Iganga Uganda. The school was selected randomly from the schools in Iganga district which use technology integration in New lower secundar school curriculum.

3.2.1 Population

The population was based on the learners and teachers of the selected school in Iganga. Musana Vocational high school is the selected in new lower secondary school curriculum in technology integration in classes of senior three and four.

3.2.2 Sample size

The sample size of this study was considered depending on the number of students in the classroom per stream and teachers meant to teach that particular subject. The study was based on 66 student per stream in four rooms or classes and two teachers per stream or class. Out of the number in the class a few were selected at random to participate in the research.

3.3 Sampling criteria

O'level especially senior three and four: Learners were enrolled at O'level at Musana Vocational high school in Iganga district.

Teachers: The teachers were teaching only a particular subject at ordinary level in the new lower secondary school curriculum at Musana Vocational high school. in Iganga district.

School: Musana Vocational High School, located in Iganga district, provides a compelling case study for examining the integration of technology in a rural Ugandan school. The school has recently implemented the new lower secondary school curriculum that emphasizes the use of technology in teaching and learning. This curriculum aims to equip students with essential digital skills and enhance their overall learning experience.

The case of Musana Vocational High School is particularly relevant because it reflects the broader challenges and opportunities associated with technology integration in rural Ugandan schools. By focusing on this specific context, the study aims to uncover practical insights and strategies that can inform policy and practice in similar educational settings across the country.

Proportional allocation: The number of respondents from the school were proportionally allocated based on the total number of students in the classroom for proper representation.

3.4 Data collection methods

In this study, a mixed methods approach was used for data collection, which included both quantitative and qualitative data collection methods.

Quantitative data was collected through a survey questionnaire administered to the selected students and teachers. The questionnaire was designed to collect data on the use of technology integration in new lower secondary school curriculum. The questionnaire was administered manually and the responses were analyzed.

Qualitative data was collected through in-depth interviews with the students of the school and selected teachers to explore the teacher knowledge on the technology integration and challenges facing the use of technology in in new lower school curriculum.

In addition to that, focus group discussions were conducted with selected students to obtain their views and perspectives on the extent to which teachers use technology in the teaching of English language. The data collected was analyzed thematically to identify the key themes and ideas in the data.

3.5 Research instruments

The instruments used in this study, were;

Questionnaire: A questionnaire was administered to collect quantitative data from the purposively selected students and teachers. The questionnaire comprised of questions that were designed to collect data on technology integration in new lower secondary school curriculum.

In-depth interviews: In-depth interviews were conducted with purposively selected teachers to explore their knowledge on technology integration in the new curriculum at ordinary level. The interviews were both audio-recorded and semi-structured.

Focus Group Discussions: In this study, focus group discussions were conducted with selected learners at O'level to obtain their perspectives on the way ways how teachers use technology in the new lower secondary school curriculum. The focus group discussions were recorded.

The research instruments were chosen to collect quantitative data and qualitative data in order to provide a comprehensive understanding of the research problem. The questionnaire was designed to collect data from a large number of respondents to facilitate research.

In-depth interviews and focus group discussions were selected to obtain a variety and detailed data on technology integration in the new lower secondary school curriculum.

3.6 Validity and reliability of the methods proposed

Content validity: The questionnaire, interview guide, and focus group discussion guide were reviewed by the supervisor to ensure the questions were relevant and appropriate for the study.

Pilot testing: Questionnaire, interview guide, and focus group discussion guide were pilot tested with small groups of respondents to identify any potential issues with the questions and to ensure they are understandable and appropriate.

Data triangulation: The use of multiple data collection methods which include; focus group discussions, interviews, and questionnaires were to enhance the validity of the findings

To establish the validity of the instruments, the study administered questionnaires to the various respondents, computation was done by Microsoft excel including tables. This is basically for the case of questionnaire research instruments.

3.7 Ethical considerations in the study

Informed consent: The respondents were educated on the purpose of the study, their rights and the procedures involved in the study. The respondents were therefore required to provide informed consent before participating in the study.

Voluntary participation: The learners and their teachers participated voluntarily and were free to withdraw from the study at will without any consequences.

Confidentiality: The respondents' identities were kept confidential and the collected data was only accessible to the researcher.

Respect for respondents: The respondents were treated with respect and dignity.

3.8 Limitation of the study

3.8.1 The geographical limitation:

The study was carried out in Musana Vocational high school in Iganga district and this makes the findings ungeneralizable to other constituencies.

3.8.2 Content limitations:

The study was focused on New lower secondary school curriculum and technology integration at Musana Vocational high school; therefore, the findings may not apply to other areas and level of education.

3.8.3 Limitations on the scale of impact:

The impact of the study might be limited to the respondents involved in the study which makes the findings centered on that particular school differing from other schools

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

This section provides summary of data collected. Data was collected by the use of interview guides for students and teachers. In this chapter the findings are presented under headings per specific objective I, objective II objective III.

This chapter contains two sections; the response rate and findings on the objective of the study which are explained in the tabula form by use of descriptive and inferential statistics.

4.1 Presentations of findings

Demographic information of the participants

This section includes the respondents, level of education, age, gender, class and experience on the use technology in New lower secondary school curriculum at Musana vocational high school. The demographic information gathered from the respondents was very vital in understanding and ascertaining their relevance in the study.

The demographic information of respondents

CHARACTERS	CATEGORY	TEACHER	STUDENT
LEVEL OF EDUCATION	Secondary	0	30
	University	5	0
AGE	13-18 years	0	30
	26-50 years	5	0
GENDER	Male	3	20
	Female	2	10
CLASS	S.1	0	0
	S.2	0	10
	S.3	0	10
	S.4	0	10

Research question I: How has Musana Vocational High school integrated technology into its new lower secondary school curriculum.

Learning apps	Learning tools	YES OR NO
Quipper school	Interactive multimedia	NO
Capela	Computer	YES
Zoom	Sound system	YES
Google	Tablet	YES

Research question II. What are the barriers faced during the integration of technology at Musana Vocational High School.

Barriers	No of students.	True/ False	No of teachers
Lack of proper training	23	True	5
Outdated content	12	True	5
Lack of real- life example	7	False	4
Lack of digital literacy	22	True	3
Lack of adequate infrastructure	17	True	3
Lack of flexibility	15	true	4

Research question 111. How have teachers prepared for integration of technology in New lower secondary school curriculum in Uganda.

TEACHERS	AGE	SEX	KNOWLEDGE	PERCENTAGE
Teacher 1	29	M	Pedagogical knowledge	80
Teacher 2	36	M	Technological knowledge	70
Teacher 3	41	F	Content knowledge	63
Teacher 4	28	F	Technological pedagogical content knowledge	60
Teacher 5	33	M	Digital citizenship	67
Teacher 6	34	M	Creativity and innovation	20

CHAPTER FIVE

Discussion, Conclusion and Recommendations

5.0 Introduction

This section outlines the discussion of findings and discussions of the research findings.

This section also presents the conclusions of the study based on the findings and recommendations basing on the objectives.

5.1 Discussion of Findings

5.1.1 Specific objective I:

To evaluate the extent of technology integration in new lower secondary school curriculum.

The following are the kind of technology teachers use in teaching in new curriculum.

1. Interactive multimedia

Technology helps make it easy to combine several media including text, graphics, audio, video, and animation, to become computer program applications. Multimedia can usually be found on websites.

2. Television

Television is a system for converting visual images with sounds into electronic signals, transmitting them by radio or other means, and displaying them electronically on the screen.

3. Computer

Computer or Personal Computer (PC) is an electronic device which is capable of receiving data information and performing a sequence of logical operations in following with a predetermined but variable set of procedural instructions program to produce a result in the form of information or signals.

4. Sound system

A Sound system that is usually found in one part a computer device. Sound systems are combined into one with a laptop, besides that there is also a separate device. The various types of Technology have shaped the way teachers teaching English and of types of Technology that have been used to language laboratory is one of the types of Technology

provide language learners. The use of ICT making language teaching more exciting, teachers believe can't be separated with the success of teaching and learning activities. Types of Technology either non-web-based or web-based, they facilitate language learning, teaching language.

The variety of so many and different media and technology that can be used to obtain information and knowledge can be classified into non-projected media like photographs, diagrams, exhibition materials and models. Media that can be projected, audio media such as cassettes, compact disc (CD) audio that contains recordings, sources and recordings of music. Media motion pictures or video media such as VCD, DVD, computer-based learning, multimedia and computer networks. All these varieties have their own characteristics in conveying information and knowledge to the learners, especially in the process of teaching and learning processes like audio medium is usually used for training and developing ability to hear and understand information through the element of sound especially in learning English for example audio medium can be used to practice pronunciation and a learner's ability to understand a verbally expressed story known as comprehension listening.

English Learning Apps

1. Quipper School

Quipper is an online platform/application that we can all use for free for teaching and learning English as a foreign Language. Quipper also known as equipper school, is a web-based online learning application. Quipper provides the teachers and the students used web-based learning application to supports via virtual storage that allows them upload and keep their PowerPoint presentations, PDF files, pictures, and online video. This application also can be able to helps teachers for monitoring their students' learning without encountering of time. As a web-based learning platform, in Quipper, teachers can develop learning materials that are of course being enriched by visual and audio media, like text with its illustration, pictures, videos or even other multimedia resources.

2. A Capela Group

A Capela group is an application that can makes it so easy for English teachers to help them to develop their students' ability in Listening skills. Teachers typing Acapella sentences will process these sentences into the sounds we want. A Capela helps the teachers to makes it easy for them to teach different listening and pronunciation between the British version of English

and also the American version of English. By using A Capela, the teachers also can be able to choose the desired speaker accent and gender.

5.1.2 Specific objective II: To identify barriers for effective ICT integration.

The study showed that technology integration at Tororo Girls school faces many challenges.

A large number of respondents from teachers and students were showing that there are variety of challenges. The respondents were asked to give their views by ticking on the alternative and ticked as follows.

Lack of proper training & support

Due to a lack of training and support, teachers resist ICT integration in teaching. When proper training regarding the use of educational technology isn't provided to teachers, they are more likely to postpone its use.

Outdated content

Another challenge of educational technology is the outdated and irrelevant e-learning content. This disincentivizes teachers to use technology in the classroom. It creates an unnecessary burden on them as they are forced to refer to textbooks to deliver quality lessons. Referring to different resources for teaching results in a lot of time wastage. It also impacts their ability to make the learning process engaging and interactive.

Lack of real-life examples

Students learn concepts better when they are given real-world examples that are relevant to their lives. Without these examples, it can be challenging for teachers to demonstrate the practical applications of the knowledge to their students.

Teachers may be hesitant to use e-learning content that lacks real-life examples, especially if they are unfamiliar with how to bridge the gap between theoretical knowledge and real-world applications. Poor internet connection

Poor internet connectivity is one of the major challenges of educational technology for teachers, especially in rural and semi-urban areas. It is not possible to integrate ICT in teaching if there is a lack of proper internet connection in educational institutions. It costs a teacher a lot of time and effort to deal with frequent interruptions in connections.

Lack of proficiency in ICT.

Almost all educational applications and software are available in the English language. Language barriers may prevent teachers from using technology in areas where English is not the dominant language, especially in backward areas. Thus, teachers with limited English proficiency may not be able to benefit from these edtech tools.

Lack of digital literacy

Lack of digital literacy among teachers hinders their ability to use digital teaching material and hampers the learning process. They lack the skills required to set up and use edtech tools. They also face difficulty in understanding the features and use of such tools. A lack of digital literacy can make it difficult for teachers to solve technical problems quickly, resulting in reluctance to use technology in teaching.

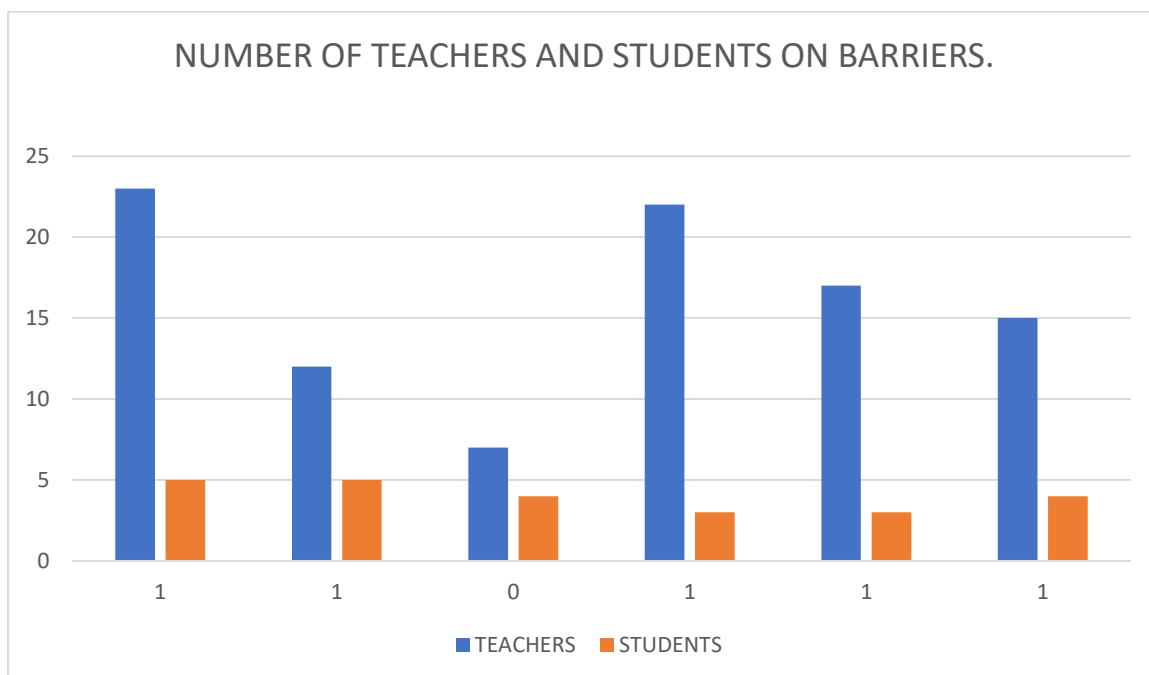
Lack of adequate infrastructure

Integration of educational technology in the classroom requires basic infrastructure like electricity, internet connectivity, smartboards, computers, etc. Unfortunately, a lot of educational institutions don't have this basic infrastructure in place due to limited funding, making it tough for teachers to make effective use of technology in classrooms. This is especially true for government schools and educational institutions that are located in rural areas.

Lack of flexibility

This is one of the most important challenges of educational technology. Teachers adapt their teaching style and language of instruction according to the individual needs of the students. They customize the lessons according to a student's level of understanding and knowledge. This ensures a better learning outcome. However, edtech tools don't provide the same level of flexibility, which makes teachers hesitant to use technology in classroom.

A GRAPH SHOWING THE NUMBER OF TEACHERS AND STUDENTS ON BARRIERS ON TECHNOLOGY USE.



5.1.3 Specific objective III: To analyze teacher preparedness of technology integration.

According to the responses about the teacher knowledge, technology has transformed learners into digital learners requiring teachers to integrate technology into their pedagogical approaches, where teachers' attitude, technological knowledge and skills to play a significant role in its effective integration. The study presents the teachers perception regarding technology integration in their teaching-learning practices in education. The finding was showing that teachers have the pedagogical knowledge of technology integration in English language classroom.

Pedagogical Knowledge

Pedagogical knowledge is the understanding of how students learn, what motivates them, and how to design and deliver instruction that meets their needs and goals. Technology integration is not about using tools but using them in ways that support and enhance learning outcomes so teachers need to have a solid pedagogical foundation that guides their decision on when, why and how to use technology in teaching.

Technological knowledge

This is the familiarity and competence with various types of technology, such as hardware, software, applications, platforms and systems. Teachers have the basic level of technological literacy that allows them to operate, troubleshoot, and evaluate technology tool. They also need to keep up with the latest trends and innovation in education technology and be able to select and use the most appropriate and effective tools for their teaching context and objectives.

Content knowledge

Content knowledge is the mastery of the subject matter that the educators teach, including the concepts, facts, principles and theories. Technology integration is not a substitute for content knowledge, but a way to enrich and extend it. Teachers need to have a deep and comprehensive content knowledge that enables them to integrate technology in meaningful and relevant ways that enhance student understanding and application of the subject matter.

Technological pedagogical content knowledge.

Technological pedagogical content knowledge is the integration of pedagogical, technological, and content knowledge in a coherent and balanced way. It is the ability to use technology in teaching ways that are aligned with the content, the pedagogy, and the students. Teachers need to develop TPACK by reflecting on their own practice, collaboration with other teachers, and engaging in continuous professional development.

Digital citizenship

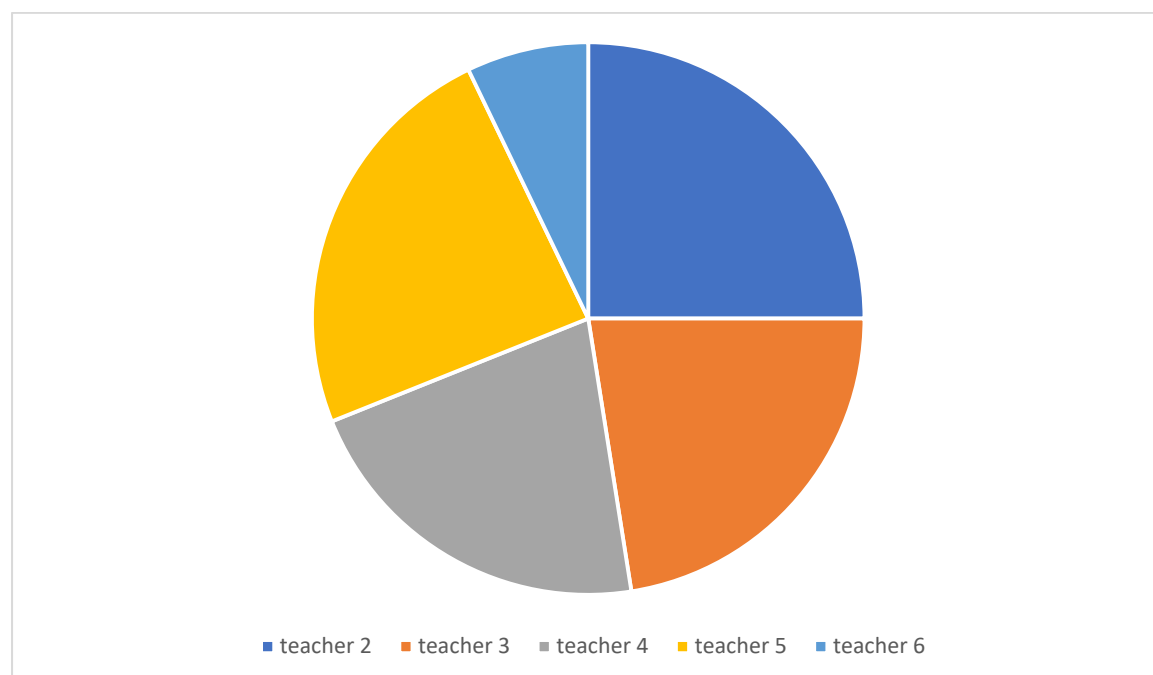
Digital citizenship is the responsible ethical use of technology in online and offline environments. It involves respecting the right and privacy of others, protecting personal and professional data, following the rules and norms of online communication, and being aware of the social and environment impacts of technology. Teachers need to model and teach digital citizenship skills to their students and help them become safe, respectful, and responsible digital citizens.

Creativity and innovation

Creativity and innovation are the abilities to generate and implement new and original ideas that solve problems or add value. Technology integration can foster creativity and innovation in teaching and learning by providing opportunities for exploration, experimentation,

collaboration, and feedback. Teachers need to cultivate their own creativity and innovation skills and encourage their students to use technology in creative and innovative ways that enhance their learning and expression

A PIE CHART SHOWING PERCENTAGES IN TECHNOLOGY USE IN SCHOOL BETWEEN TEACHERS.



5.2. Conclusions and Recommendations

5.2.1. Conclusions

Thus, it has become clear from the above research data that the present classroom requires the best teachers who can bring innovation into their instructional practices so technology integration helps learners meet their needs and teachers have to use their pedagogical knowledge and preferable technology application that align with their pedagogical strategies about teaching and learning. The study also gives an insight to understand teacher knowledge, the extent and challenges encountered while integrating technology in teaching of English language classroom.

5.2.2 Recommendations

Recommendations for Policy:

The government should prioritize the use of technology in education system and provide adequate resources and support to enhance learning process.

There is a need to develop policies that promote the use of assistive technologies and teaching aids to enhance the learning of learners.

Recommendations for Community Development:

Communities should embrace the use of technology being used in the teaching of new lower secondary school curriculum.

Communities should provide the effective technology equipment's for the learners to use while in new lower curriculum while home for examples phones, internet connection that enables them to connect with fellows on Zoom, google while learning.

Recommendations for Further Research:

It is necessary to conduct further study on technology integration that can be used in the new lower secondary school curriculum and explore the effectiveness of different teaching methods and strategies for teaching in the new curriculum to learners using technology and how to advocate for their challenges affecting technology integration.

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APPENDICES

Appendix A

QUESTIONNAIRE FOR STUDENT

Dear respondent,

My name is MUGENI MOREEN. I am in my final year of study at Busitema University pursuing a bachelor of education language (English and literature) and as part my course, I am carrying out a study on the topic “New lower secondary school curriculum and Technology integration at O’level at a case study of Musana Vocational high School.

You have been identified to greatly contribute to this study by giving responses which honestly reflect your views.

The researcher assures you that the information obtained will be exclusively confidential and will be used for this study only.

Please answer all the questions in all the sections by ticking the response of your choice.

Your co-operation is highly appreciated.

Thank you in advance for your anticipated response and taking your time to fill in this questionnaire.

Sincerely,

MUGENI MOREEN.

Researcher.

SECTION: A

Demographic information

What is the level of your education?

Nursery Primary Secondary Tertiary University None

--	--	--	--	--	--

What is your age range?

6-12years 13-18years 19-25years 26-50years above50years

--	--	--	--	--

What is your gender?

Male Female

--	--

In which class are you?

S.1 S.2 S.3 S.4

--	--	--	--

Have you used technology in English language classroom while learning at Tororo Girl's School.

YES

NO

--	--

RESEARCH QUESTION 1: How have teacher prepared for integration of technology in lower secondary school curriculum.

Below are some of the knowledge teachers have on technology integration in Musana vocational high school.

S/N	Statement	Yes	No
1	Using sound systems		
2	Knowledge about phones		
3	Using projectors		
4	Teacher training support		
5	English language support programs		

RESEARCH QUESTION 2: How has Musana vocational high school integrated technology in the new lower secondary school curriculum.

To a larger extent teachers use technology in the teaching of English language in the classroom at Musana Vocational high school.

S/N	TECHNOLOGY	True	False
1	Interactive multimedia		

2	computers		
3	Sound systems like microphones		
4	E- book		
5	Twitter		
6	You tube		
7	Google classroom like Zoom		

RESEARCH QUESTION 3: What are the barriers facing technology integration in the new lower secondary school curriculum.

There are challenges facing technology integration in the new lower secondary school curriculum at Musana vocational high school.

S/N	Statement	True	False
1	Lack of proper training and support		
2	English language support learning programs		
3	Integration of technology		
4	Lack of Digital literacy		
5	Technological difficulties		
6	Lack of adequate infrastructure		
7	Language immersion programs		

END

THANK YOU FOR YOUR CO-OPERATION.

Appendix B

QUESTIONNAIRE FOR TEACHERS

Dear respondent,

My name is MUGENI MOREEN. I am in my final year of study at Busitema University pursuing a bachelor of education language (English and literature) and as part my course, I am carrying out research on the topic, ‘Technology integration in the English Language classroom, a case study of Tororo Girls’ school.

You have been identified to greatly contribute to this study by giving responses which honestly reflect your views.

The researcher assures you that the information obtained will be exclusively confidential and will be used for this study only.

Please answer all the questions in all the sections by ticking the response of your choice.

Your co-operation is highly appreciated.

Thank you in advance for your anticipated response and taking your time to fill in this questionnaire.

Sincerely,

MUGENI MOREEN.

Researcher.

SECTION: A

Demographic information

What is the level of your education?

Nursery Primary Secondary Tertiary University None

--	--	--	--	--	--

What is your age range?

6-12years 13-18years 19-25years 26-50years above50years

--	--	--	--	--

What is your gender?

Male Female

--	--

Have you used technology in the English language classroom at Tororo Girls' school.

YES NO

--	--

RESEARCH QUESTION 1: How have teacher prepared for integration of technology in lower secondary school curriculum.

Below are some of the knowledge teachers have on technology integration in Musana vocational high school.

S/N	Statement	True	False
1	Using sound systems		
2	Knowledge about phones		
3	Using projectors		
4	Teacher training support		
5	English language support programs		

RESEARCH QUESTION 2: How has Musana vocational high school integrated technology in the new lower secondary school curriculum.

To a larger extent teachers use technology in the teaching of English language in the classroom at Musana Vocational high school.

S/N	TECHNOLOGY	True	False
1	Interactive multimedia		
2	computers		
3	Sound systems like microphones		
4	E- book		
5	Twitter		
6	You tube		
7	Google classroom like Zoom		

RESEARCH QUESTION 3: What are the barriers facing technology integration in the new lower secondary school curriculum.

There are challenges facing technology integration in the new lower secondary school curriculum at Musana vocational high school.

S/N	Statement	True	False
1	Lack of proper training and support		
2	English language support learning programs		
3	Integration of technology		
4	Lack of Digital literacy		
5	Technological difficulties		
6	Lack of adequate infrastructure		
7	Language immersion programs		

END

THANK YOU FOR YOUR CO-OPERATION.