



FACULTY OF SCIENCE AND EDUCATION

DEPARTMENT OF MATHEMATICS

FINAL YEAR PROJECT REPORT

**THE IMPACT OF ICT ON STUDENT'S ENGAGEMENT AND MOTIVATION IN
MATHEMATICS COURSES AT NAGONGERA CAMPUS, BUSITEMA UNIVERSITY**

By

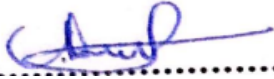
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This Final Year Project Is Submitted to The Department of Mathematics in Partial Fulfillment of
the Requirement for The Award of Degree of Bachelor of Science Education of Busitema
University

MAY 2026

DECLARATION

I CHEKWEMBOI REBECCA hereby declare that the information contained in the research report is my original work and has never been submitted by any one for any award to any institution of higher learning.

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APPROVAL

This is to certify that this research report on 'THE IMPACT OF ICT ON STUDENT'S ENGAGEMENT AND MOTIVATION IN MATHEMATICS COURSES AT NAGONGERA CAMPUS BUSITEMA UNIVERSITY has been written under my guidance and supervision and it is now ready for examination.

Signature:  Date: 04 July 2026

Dr. Anselm O. Oyem

DEDICATION

This research report is dedicated to my beloved parents Mr. Saik Moses and Mrs. Kusuro Everline who have supported me in every area of my academic journey, and to my siblings, friends and relatives for the courage that they have always provided to me, then to my lecturers and FAWE Uganda.

ACKNOWLEDGEMENTS

I am grateful to God Almighty who provided me with the strength and perseverance to complete this work successfully. I sincerely acknowledge the support and guidance of my supervisor Dr. Anselm O. Oyem whose expertise greatly contributed to this research.

To the Head of Department, Dr. Mwasa Abubakar, and the entire staff of mathematics department, Busitema University, Nagongera Campus, I say a big thanks to you all for moulding me into the best that I am today.

To my parents Mr. Saik Moses and Mrs. Kusuro Everline, I'm so much grateful for the financial and moral support that you offered unto me throughout my study.

To FAWE Uganda, I extend my sincere gratitude for their tireless support that you offered to me. I also appreciate the assistance of my friends and family who encouraged me during challenging times.

Special thanks go to the respondents, community leaders, and all participants who willingly shared their knowledge and experiences.

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ABSTRACT

The impact of ICT on students' engagement and motivation in mathematics courses at Nagongera Campus, Busitema University was considered. The study, guided by three objectives namely; assess to the effect of ICT instructional tools, ICT accessibility and infrastructure, and ICT competence on students' engagement and motivation in mathematics learning. A descriptive cross-sectional research design was adopted, and data were collected from a sample of 127 respondents selected using Krejcie and Morgan's sampling table. The collected data were analysed using SPSS 26 and the findings revealed that ICT instructional tools significantly enhance students' engagement, with 87.4% agreeing that they make mathematics lessons more interesting and 77.1% reporting improved understanding. Accessibility and infrastructure of ICT, positively influenced learning, with 77.1% of respondents reported reliable internet access, although 34.6% indicated challenges in accessing online materials. Furthermore, ICT competence was found to improve engagement and motivation, with 59.8% of respondents agreeing that digital skills enhance their participation in mathematics learning activities. It is evident that ICT plays a crucial role in improving student engagement and motivation in mathematics courses and strengthening ICT infrastructure, enhancing continuous ICT training, and improving instructional integration of ICT tools to maximize learning outcomes in higher education institutions, improves STEM related studies.

CHAPTER ONE

1.1 Background of the study.

Globally, Information and Communication Technology (ICT) has transformed higher education through enhancing students' engagement and motivation across various disciplines, including mathematics. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2023), over 70% of universities worldwide have integrated digital learning platforms such as Learning Management Systems (LMS), virtual simulations, and online assessment tools to improve learning outcomes. These studies has shown that ICT-supported instruction increases student engagement by 30–50% and improves academic performance in mathematics-related courses by approximately 20–35% compared to traditional teaching methods (OECD, 2022; World Bank, 2023).

Interactive technologies such as digital whiteboards, computer algebra systems, and online quizzes promote active participation and collaborative learning. However, disparities in infrastructure, digital skills, and access to devices continues to limit full ICT integration in developing regions. These global findings suggest that ICT plays a critical role in fostering motivation, improving conceptual understanding, and enhancing student participation in mathematics education.

In Sub-Saharan Africa, ICT adoption in higher education has grown steadily, yet challenges persist. Reports indicated that only about 40–50% of universities in the region have fully functional e-learning systems (World Bank, 2023). Research conducted in African universities shows that students exposed to blended learning approaches demonstrate 25–40% higher engagement levels and improved problem-solving skills in mathematics compared to those taught using traditional approaches (UNESCO, 2022). However, inadequate internet connectivity, limited access to computers, and inconsistent electricity supply hinder effective ICT utilization. In many public universities, less than 60% of students have reliable personal access to digital learning devices, affecting participation in online-based mathematical activities. Despite these constraints, ICT integration has shown potential in improving attendance, assignment completion rates, and overall motivation among science students.

In East Africa, countries such as Kenya and Tanzania have invested in digital transformation initiatives within higher education institutions. While over 65% of public universities use LMS platforms to support mathematics instruction, leading to reported improvements in student participation and continuous assessment scores by 20–30% in Kenya (Kenya Ministry of Education, 2022), Tanzania's blended learning programs have improved mathematics course completion rates by approximately 15–25% in selected universities (World Bank, 2023). However, digital divide challenges remain significant, particularly in rural-based campuses where internet bandwidth and access to digital tools are limited. These regional experiences highlight the importance of ICT infrastructure, institutional support, and digital literacy in enhancing engagement and motivation in mathematics courses.

In Uganda, ICT integration in higher education has been promoted through national digitalization policies and university-level initiatives. According to the Ministry of Education and Sports (2023), about 55% of universities have adopted e-learning systems to supplement classroom instruction. At institutions such as Busitema University, efforts have been made to integrate ICT tools including online lecture notes, digital assignments, and virtual communication platforms. However, student engagement in mathematics courses remains a concern, with internal academic reports indicating that pass rates in some mathematics-related units range between 50–65%, and class participation remains inconsistent. Limited internet access, inadequate digital resources, and varying levels of ICT competence among students may affect effective integration of technology into mathematics instruction.

Therefore, this study seeks to examine the impact of ICT on students' engagement and motivation in mathematics courses at Nagongera Campus, Busitema University, in order to generate evidence-based recommendations for improving teaching and learning outcomes..

1.2 Problem Statement

Integration of ICT in mathematics instruction at Busitema University, particularly at Nagongera Campus, should ideally increase student engagement levels above 70% and improve average mathematics pass rates to at least 75% through interactive simulations, Learning Management Systems, and computer-assisted problem solving (MOES, 2022; World Bank, 2023). National ICT in Education Policy frameworks project that, effective digital integration could raise student's

participation by 30–45% and improve academic performance by 20–35% in science-related courses (MOES, 2022; UNESCO, 2023). Empirical studies indicate that universities with consistent ICT-supported instruction report motivation indices exceeding 65% compared to below 40% in traditional lecture-based settings (OECD, 2022). However, faculty academic reports at Nagongera Campus indicate that mathematics pass rates have fluctuated between 45–58% over the past three academic years, with some first-year classes recording failure rates above 40% (Busitema University Academic Report, 2023). Student course evaluation summaries further show that less than 50% of learners actively use the LMS for mathematics-related tasks despite campus internet availability (ICT Directorate Report, 2023). Regional higher education reviews in Eastern Uganda reveal that inadequate lecturer training in pedagogical ICT integration reduces effective classroom technology use by nearly 35% (NCHE, 2022). Studies in Ugandan public universities also report that only 38–52% of students demonstrate high behavioral engagement in ICT-supported mathematics lessons due to limited digital competencies and unstable connectivity (Ssempala et al., 2021). These disparities between projected ICT outcomes and actual engagement and performance indicators reveal a clear implementation gap in mathematics instruction at Nagongera Campus. Without empirical assessment of how ICT influences behavioral, emotional, and cognitive engagement as well as intrinsic and extrinsic motivation, institutional investments may not yield the expected academic returns (World Bank, 2023). It is against this documented gap between policy expectations and actual student performance outcomes that this study seeks to examine the impact of ICT on students' engagement and motivation in mathematics courses at Nagongera Campus, Busitema University.

1.3 Research Objectives

1.3.1 General Objective of the study

To examine the impact of Information and Communication Technology (ICT) on students' engagement and motivation in mathematics courses at Busitema University, Nagongera Campus.

1.3.2 Specific objectives of the study

- i. To examine the effect of ICT instructional tools on students' engagement and motivation;
- ii. To assess the influence of ICT accessibility and infrastructure on students' engagement and motivation; and
- iii. To determine the effect of digital skills on students' engagement and motivation in mathematics courses at Nagongera Campus.

1.4 Research Questions

- i. How do ICT instructional tools affect students' engagement and motivation in mathematics courses at Nagongera Campus?
- ii. How does ICT accessibility and infrastructure influence students' engagement and motivation in mathematics courses at Nagongera Campus?
- iii. What is the effect of ICT competence (digital skills) on students' engagement and motivation in mathematics courses at Nagongera Campus?

1.5 Significance of the Study

This study will provide useful information to university management and policymakers on how ICT integration can effectively enhance student engagement and motivation in mathematics courses at Nagongera Campus. The findings will help academic planners and the ICT Directorate at Busitema University identify gaps in ICT utilization and design strategies to improve digital teaching practices. The study will support lecturers by highlighting key factors that influence student participation and interest in mathematics when ICT tools are used. It will also benefit students by recommending practical approaches to improve digital learning experiences and motivation in mathematics. Furthermore, the study will contribute to academic knowledge by providing empirical evidence for future researchers investigating ICT integration, student engagement, and motivation in higher education institutions in Uganda.

1.6 Scope of the Study

The study will be conducted at Nagongera Campus of Busitema University located in Tororo District, Eastern Uganda. Data will be collected from undergraduate students enrolled in mathematics-related courses and selected lecturers teaching these courses. The campus is selected because it offers science-based programs where mathematics is a core subject, and it has established ICT facilities intended to support teaching and learning. The findings will therefore reflect the ICT-learning environment specific to Nagongera Campus.

1.7 Operational Definitions.

ICT; Tools and resources used to communicate, create, store, and manage information in teaching and learning.

Student Engagement; This is the involvement and participation of students in the learning activities.

Student Motivation; This is the internal and external drive that stimulates students' efforts and persistence in learning.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature on the impact of ICT on students' engagement and motivation in mathematics courses. It examines global, regional, and local studies related to ICT integration in education. The chapter also identifies research gaps relevant to the study.

Effect of ICT instructional tools on students' engagement and motivation in mathematics courses at Nagongera Campus.

Globally, the use of ICT instructional tools in education has improved student learning outcomes, engagement, and academic motivation. Studies by UNESCO (2023) indicate that over 70% of universities worldwide have adopted digital teaching tools such as multimedia presentations, virtual simulations, and online assessment systems to enhance interactive learning. Research shows that ICT-supported learning can improve student participation in mathematics courses by 30–50% compared to traditional teaching methods (World Bank, 2023; OECD, 2022). ICT tools such as digital whiteboards, mathematical software, and video tutorials improve conceptual understanding and problem-solving skills. However, challenges such as digital inequality, lack of technical skills, and limited infrastructure still limit full ICT integration in developing countries. These global findings show that ICT instructional tools are important drivers of student engagement and motivation in mathematics education.

In Sub-Saharan Africa, ICT integration in higher education is growing but still faces structural and resource limitations. Reports indicate that only about 40–50% of universities in the region have fully functional e-learning systems (World Bank, 2023). Studies conducted in African universities show that students using ICT-supported learning platforms demonstrate 25–40% higher engagement levels in mathematics courses compared to students using traditional lecture-based teaching (UNESCO, 2022). In Uganda, limited computer access and poor internet connectivity reduce ICT-based learning effectiveness. Studies in Ugandan universities show that only about 50–60% of students regularly use digital learning platforms for academic work (NCHE, 2022). These regional findings suggest that ICT tools can improve engagement and motivation but require adequate infrastructure and training support.

In East Africa, particularly in Kenya and Tanzania, ICT adoption in education has improved mathematics teaching and learning experiences. In Kenya, about 65% of universities use learning management systems for course delivery, improving student participation and assessment performance by about 20–30% (Kenya Ministry of Education, 2022). In Tanzania, blended learning approaches have improved mathematics course completion rates by 15–25% (World Bank, 2023). However, digital inequality between urban and rural institutions continues to affect ICT-based learning outcomes. These regional trends demonstrate the importance of institutional ICT investment and digital literacy development.

At Busitema University, ICT instructional tools have been introduced to support teaching and learning at Nagongera Campus. University reports indicate that mathematics pass rates range between 50–65%, with low student participation in some ICT-supported lessons (Busitema Academic Report, 2023). Despite availability of computer laboratories, some students rarely use online learning platforms due to limited digital skills and unstable internet connectivity. Studies in Eastern Uganda show that inadequate lecturer training in ICT pedagogical integration reduces effective technology use by about 35% (NCHE, 2022). Therefore, there is a research gap regarding how ICT instructional tools specifically influence engagement and motivation in mathematics courses at Nagongera Campus. This study therefore seeks to examine this relationship

Influence of ICT accessibility and infrastructure on students' engagement and motivation in mathematics courses at Nagongera Campus.

Globally, ICT accessibility and infrastructure play a significant role in improving student engagement and motivation in higher education. According to UNESCO (2023), over 65–75% of universities in developed countries have reliable internet connectivity, computer laboratories, and digital learning platforms that support interactive mathematics learning. Studies show that students with reliable access to ICT infrastructure demonstrate 30–45% higher participation rates in online learning activities and mathematics practice tasks (World Bank, 2023; OECD, 2022). Access to high-speed internet, laptops, and digital libraries improves self-directed learning and problem-solving abilities in mathematics courses. However, digital infrastructure inequality still exists globally, especially in low-income countries, limiting equal access to ICT-based education. These global findings demonstrate that ICT accessibility is a key determinant of academic motivation and engagement.

In Sub-Saharan Africa, ICT infrastructure remains a major challenge in higher education institutions. Reports indicate that only about 35–50% of universities in the region have stable internet connectivity and sufficient digital learning resources (World Bank, 2023). Studies conducted in African universities show that students with access to reliable ICT infrastructure achieve 25–40% better academic engagement levels compared to those with limited access (UNESCO, 2022). In Uganda, unstable electricity supply, high internet costs, and limited computer availability affect ICT-based learning. According to the National Council for Higher Education (2022), less than 60% of university students regularly access online academic materials due to infrastructure limitations. These challenges reduce motivation and active participation in mathematics learning activities.

In East Africa, countries such as Kenya and Tanzania have invested in digital education infrastructure. In Kenya, about 70% of public universities have established digital learning systems and campus-wide internet connectivity, improving mathematics learning participation by about 20–35% (Kenya Ministry of Education, 2022). In Tanzania, universities that implemented blended learning infrastructure reported improved student attendance and assignment submission rates by 15–30% (World Bank, 2023). However, rural-based campuses still face connectivity challenges that affect digital learning effectiveness. These regional experiences highlight the importance of institutional investment in ICT infrastructure for improving mathematics education outcomes.

At Busitema University, ICT accessibility at Nagongera Campus is improving but still faces challenges related to bandwidth limitations and device shortages. Internal university ICT reports indicate that only about 55–65% of students regularly access online learning materials for mathematics courses (Busitema ICT Directorate Report, 2023). Students who lack personal computers or smartphones experience lower participation in online mathematics discussions and assignments. Additionally, inconsistent internet connectivity sometimes interrupts online lectures and digital assessments. Studies in Eastern Uganda show that ICT infrastructure challenges reduce student academic participation by approximately 30% (NCHE, 2022). Therefore, there is a research gap regarding how ICT accessibility and infrastructure directly influence engagement and motivation in mathematics courses at Nagongera Campus, which this study seeks to address.

Effect of ICT competence on students' engagement and motivation in mathematics courses at Nagongera Campus

Globally, ICT competence or digital literacy is a major determinant of students' engagement and motivation in technology-supported learning environments. According to **UNESCO (2023)**, students with strong digital skills are **35–55% more likely** to actively participate in online learning activities and digital mathematics exercises. Studies in developed countries show that students with high ICT competence demonstrate better problem-solving abilities, higher confidence in using mathematical software, and improved academic performance compared to those with low digital literacy (OECD, 2022; World Bank, 2023). Digital skills enable learners to effectively use learning management systems, online tutorials, and virtual mathematics simulations, which enhances conceptual understanding. However, global disparities in digital literacy still exist, particularly in developing countries where ICT education is less integrated into early learning systems. These findings indicate that ICT competence strongly influences student engagement and academic motivation.

In Sub-Saharan Africa, ICT competence among university students remains uneven due to limited exposure to digital learning tools. Reports show that only about **40–50% of university students** in the region possess adequate digital literacy skills for effective online learning (World Bank, 2023). Studies conducted in African universities indicate that students with ICT skills demonstrate **25–40% higher engagement levels** in mathematics and science courses (UNESCO, 2022). In Uganda, many students acquire digital skills through informal learning rather than structured academic training. According to the **National Council for Higher Education (2022)**, only about **55% of university students** can effectively use online learning platforms for academic purposes. Limited ICT training programs and insufficient integration of digital literacy into university curricula contribute to low competence levels.

In East Africa, countries such as Kenya and Tanzania have introduced digital literacy programs to improve student ICT competence. In Kenya, digital education programs have increased student use of online learning platforms by approximately **30%** and improved mathematics course performance (Kenya Ministry of Education, 2022). In Tanzania, students with strong digital skills show improved participation in blended learning mathematics courses, with engagement levels increasing by **20–35%** (World Bank, 2023). However, differences in ICT training quality between institutions continue to affect student outcomes. These regional experiences show that ICT competence is essential for successful technology-based learning.

At Busitema University, ICT competence among students at Nagongera Campus varies depending on prior exposure to digital learning tools. University ICT reports indicate that mathematics students who frequently use digital platforms demonstrate higher participation and better understanding of mathematical concepts compared to those with limited ICT skills (Busitema ICT Directorate Report, 2023). However, some students lack sufficient training in using mathematical software, online submission platforms, and virtual learning tools. Studies in Eastern Uganda show that low digital literacy reduces student academic engagement by approximately **30–40%** (NCHE, 2022). Therefore, this study seeks to examine how ICT competence influences students' engagement and motivation in mathematics courses at Nagongera Campus.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlined the research methodology that was used to investigate the impact of ICT on students' engagement and motivation in mathematics courses at Nagongera Campus, Busitema University. It presented the research design, research approach, study area, population and sampling techniques, data collection methods, validity and reliability, data analysis, and ethical considerations used in the study.

3.1 Research Design

The study adopted a descriptive cross-sectional research design to assess the relationship between ICT integration and students' engagement and motivation in mathematics courses. This design was appropriate because it allowed data to be collected at a single point in time to capture learning experiences, ICT usage patterns, and motivation levels among students. The design helped the researcher examine how ICT instructional tools, ICT accessibility, and ICT competence influenced learning outcomes in mathematics courses.

3.2 Research Study Variables

3.2.1 Independent Variables

The independent variables were ICT instructional tools, ICT accessibility and infrastructure, and ICT competence (digital skills). These variables represented the factors that were introduced or implemented and influenced how students and lecturers assessed academic progress in mathematics.

3.2.2 Dependent Variables

The dependent variables were students' engagement and motivation, including behavioral and emotional engagement. These depended on the influence of ICT-related independent variables.

3.3 Research Approach

The study adopted a mixed-method research approach combining quantitative and qualitative techniques. Quantitative data measured ICT usage levels, student engagement indicators, and motivation, while qualitative data explored perceptions of students and lecturers on ICT use in mathematics teaching. This approach provided a comprehensive understanding of ICT influence.

3.4 Study Area and Population

The study was conducted at Nagongera Campus of Busitema University in Tororo District, Eastern Uganda. The study population included undergraduate students enrolled in mathematics-related courses, mathematics lecturers, ICT support staff, and the campus academic officer.

Table 1: Population Distribution

Respondents	Population
Mathematics Students	180
Mathematics Lecturers	5
ICT Support Staff	3
Campus Academic Officer	1
Total	189

3.5 Sample Size Determination and Sampling Techniques

The study used a sample size of 127 respondents determined using the Krejcie and Morgan (1970) sampling table. The sample included 118 students and 9 key informants. Simple random sampling was used to select students, while purposive sampling was used to select lecturers and ICT staff based on their knowledge of ICT integration.

Table 2: Sample Size and Sampling Techniques

Respondents	Population	Sample Size	Sampling Technique
Mathematics Students	180	118	Simple Random Sampling
Mathematics Lecturers	5	5	Purposive Sampling
ICT Staff	3	3	Purposive Sampling
Academic Officer	1	1	Purposive Sampling
Total	189	127	

3.6 Research Instruments

Structured questionnaires and interview guides were used to collect data. Questionnaires measured ICT instructional tool usage, ICT accessibility, ICT competence, student engagement, and motivation. Interview guides were used to obtain detailed information from lecturers and ICT staff.

3.7 Validity and Reliability of Instruments

Validity was ensured through expert review and pilot testing of instruments for clarity. Reliability was tested using Cronbach's alpha coefficient to ensure consistency of responses.

3.8 Data Collection Procedures

Data collection began after obtaining permission from university authorities. Research assistants were trained to administer questionnaires. Respondents were informed about the study purpose and consent was obtained. Both online and physical methods were used depending on ICT accessibility.

3.9 Data Analysis

Quantitative data were analyzed using SPSS version 26 using descriptive statistics such as frequencies, percentages, and means, while inferential statistics such as correlation and regression were used. Qualitative data were analyzed thematically.

3.10 Ethical Considerations

The study followed ethical standards. Participation was voluntary, informed consent was obtained, and confidentiality and anonymity were maintained. Ethical approval was obtained from the university research ethics committee before data collection.

CHAPTER FOUR

DATA ANALYSIS PRESENTATION AND INTERPRETATION OF FINDINGS

4.0. Introduction

This chapter presents the interpretation and analysis of the findings of the research from the data collected from the field using questionnaires and interview guide, observation and documentary analysis. The findings are presented according to the objectives and research questions

4.1. Biological Data of the respondents

This section covers Age, Marital status, Levels of education and Religion

Table 1: Showing the age of the respondents

Age Group	Frequency	Percent
15–25years	73	57.5%
26–30 years	41	32.5%
Above 30 years	13	10.0%
Total	127	100.0%

According to Table 1, the majority of respondents were aged between 15–25 years (57.5%), followed by 26–30 years (32.5%), while a smaller proportion (10.0%) were aged Above 30 years. This indicates that most participants were young adults, who are the primary group actively engaged in mathematics courses at Nagongera Campus, Busitema University. The dominance of younger respondents suggests a high level of ICT exposure and familiarity, which is likely to positively influence their engagement and motivation in mathematics learning. The presence of older respondents, although minimal, provides additional perspectives on ICT use across different age groups. Overall, the age distribution reflects a student population that is generally well-positioned to adopt ICT tools in supporting mathematics learning.

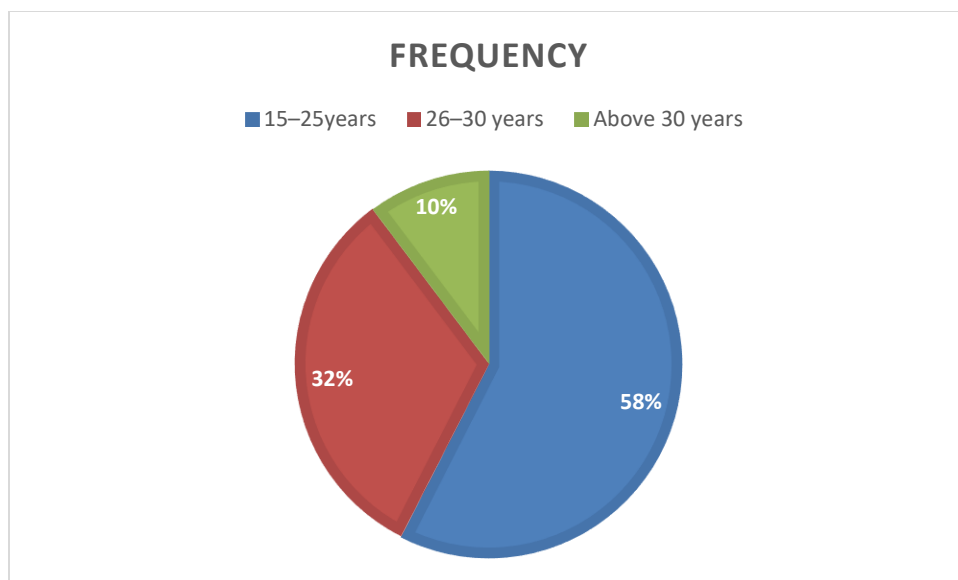


Figure 1: Pie chart showing the age of the respondents

Table 2: Showing sex of the respondents

Response	Frequency	Percent
Male	64	50.4%
Female	63	49.6%
Total	127	100.0%

According to data presented in Table 2, the study shows a nearly balanced gender distribution among respondents, with males accounting for 50.4% (64) and females representing 49.6% (63). This close representation indicates that both male and female students at Nagongera Campus, Busitema University participate almost equally in mathematics-related courses and ICT-enabled learning activities. Such gender balance is important in assessing ICT's impact on student engagement and motivation, as it suggests that findings are not biased toward one gender. It also implies that both groups are likely experiencing similar opportunities and challenges in using ICT

tools for mathematics learning. Overall, the balanced sex distribution enhances the reliability and representativeness of the study findings.

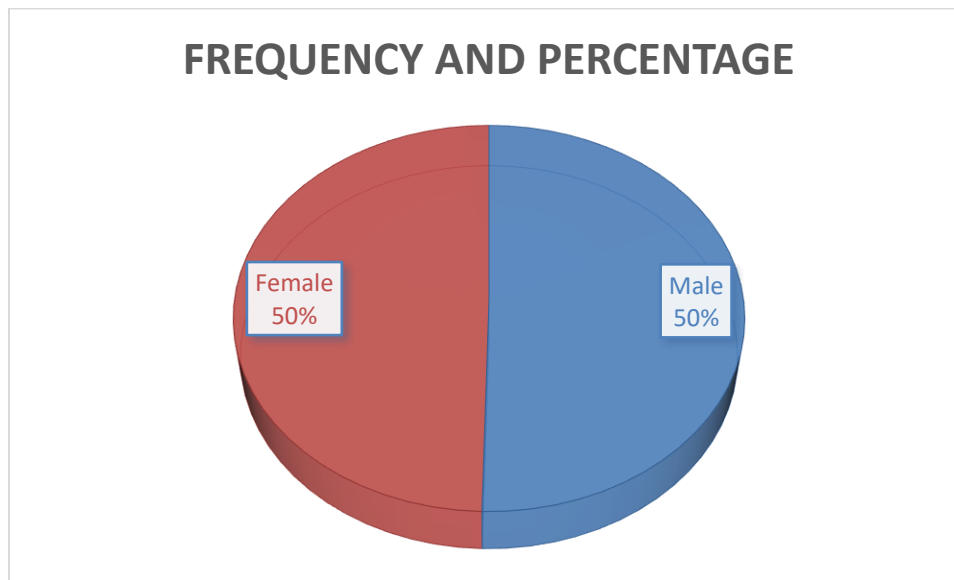


Figure 2: Pie chart showing sex of the respondents

Table 3: showing marital status of the respondents

Response	Frequency	Percent
Single	89	70.1%
Married	13	10.2%
Divorced	13	10.2%
Separated	12	9.5%
Total	127	100.0%

According to data presented in Table 3, the majority of respondents were single (70.1%), followed by married respondents (10.2%), divorced (10.2%), and separated respondents (9.5%). This

distribution indicates that most participants were unmarried students, which is consistent with the typical demographic profile of university learners at Nagongera Campus, Busitema University. The dominance of single respondents suggests that most participants are likely to have fewer family responsibilities, allowing them more time and flexibility to engage in ICT-supported mathematics learning activities. The presence of married, divorced, and separated respondents, although smaller in proportion, provides a diverse perspective on how different life circumstances may influence engagement and motivation in learning. Overall, the marital status distribution reflects a student population largely focused on academic activities, which supports the study's assessment of ICT impact on engagement and motivation in mathematics courses.

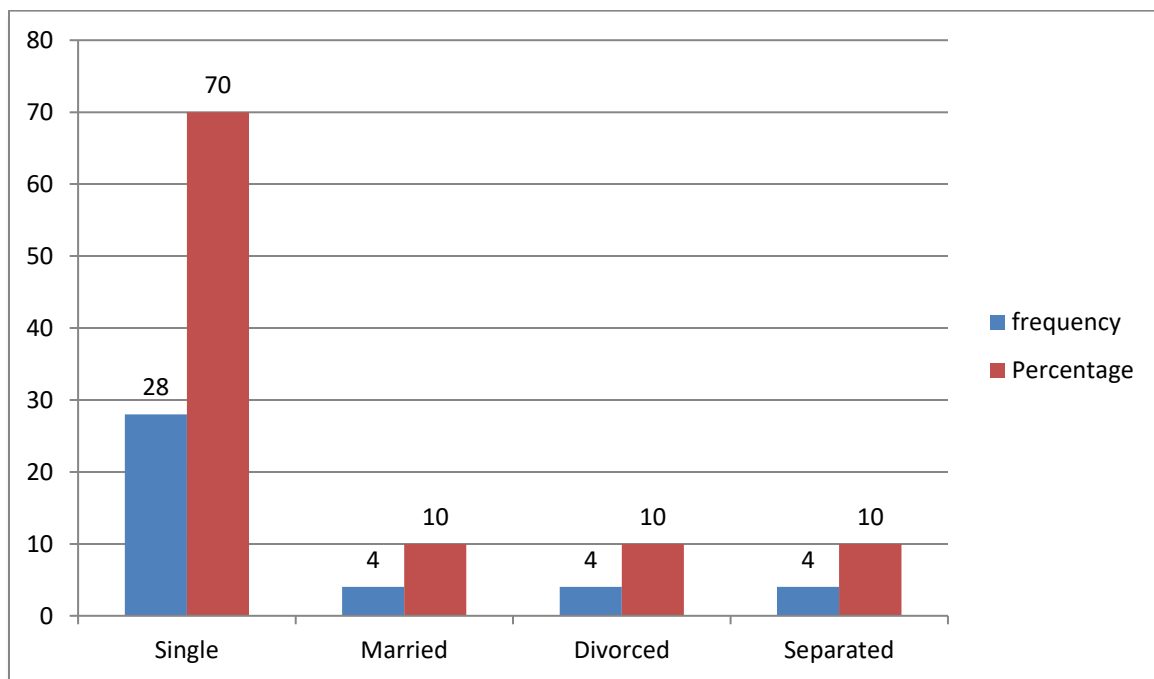


Figure 3: Bar graph showing marital status of the respondents

4.2. Effect of ICT instructional tools on students' engagement and motivation

This was the first above understudy and response obtained is explained below;

Table 4: Showing the effect of ICT instructional tools on students' engagement and motivation

Statement	SA	A	N	D	SD
ICT tools make mathematics lessons more interesting	57 (44.9%)	54 (42.5%)	10 (7.9%)	6 (4.7%)	0 (0.0%)
Multimedia presentations improve my understanding of mathematics	38 (29.9%)	60 (47.2%)	16 (12.6%)	0 (0.0%)	13 (10.2%)
Online quizzes help me practice mathematics concepts	41 (32.3%)	25 (19.7%)	0 (0.0%)	22 (17.3%)	39 (30.7%)
Video tutorials help me revise mathematics lessons	38 (29.9%)	32 (25.2%)	16 (12.6%)	10 (7.9%)	31 (24.4%)
Mathematical software helps me solve problems faster	29 (22.8%)	35 (27.6%)	19 (15.0%)	32 (25.2%)	12 (9.4%)
ICT tools increase my participation in mathematics classes	57 (44.9%)	54 (42.5%)	10 (7.9%)	6 (4.7%)	0 (0.0%)

According to data presented in Table 4, the findings show that ICT instructional tools significantly influence students' engagement and motivation in mathematics courses at Nagongera Campus, Busitema University. On the statement that ICT tools make mathematics lessons more interesting, a majority of respondents agreed, with 44.9% strongly agreeing and 42.5% agreeing, indicating that ICT enhances lesson attractiveness and student motivation.

Regarding multimedia presentations improving understanding of mathematics, 29.9% strongly agreed and 47.2% agreed, showing that visual and audio aids play a key role in simplifying complex mathematical concepts. However, a smaller proportion disagreed or strongly disagreed, suggesting that not all students benefit equally from this method.

On the use of online quizzes, responses were more mixed, with 32.3% strongly agreeing and 19.7% agreeing, while 30.7% strongly disagreed. This indicates that while some students find online quizzes helpful for practice, others may face challenges such as accessibility or usability issues.

For video tutorials, 29.9% strongly agreed and 25.2% agreed that they help in revising mathematics lessons, although 24.4% strongly disagreed. This suggests that video-based learning is useful for many students but may not be consistently accessible or effective for all learners.

Regarding mathematical software, 22.8% strongly agreed and 27.6% agreed that it helps solve problems faster, while 25.2% disagreed. This shows that while ICT tools improve problem-solving efficiency for some students, others may lack sufficient skills or exposure to fully benefit from such software.

Finally, on ICT tools increasing participation in mathematics classes, 44.9% strongly agreed and 42.5% agreed, indicating a strong positive impact on student engagement. Overall, the findings suggest that ICT instructional tools enhance students' interest, understanding, and participation in mathematics learning, although effectiveness varies depending on accessibility and digital competence.

When asked about the effect of ICT instructional tools on students' engagement and motivation in mathematics courses, mathematics students gave positive feedback on their learning experience. They stated that ICT tools make mathematics lessons more interesting and easier to understand. One student noted, *"ICT tools such as videos and online quizzes help me understand mathematics better and make lessons more enjoyable"*. Another student explained that digital tools increase participation and motivation during lessons. However, some students pointed out challenges such as limited access to computers, weak internet connectivity, and difficulties in using certain applications. Despite these challenges, students generally agreed that ICT instructional tools improve their engagement and motivation in mathematics learning.

When asked about the same issue, mathematics lecturers reported that ICT instructional tools significantly improve teaching effectiveness and student understanding. One lecturer stated, *"ICT tools such as simulations and PowerPoint presentations make it easier for students to grasp complex mathematical concepts"*. Lecturers also observed that ICT increases student participation and classroom interaction, making lessons more engaging. However, they noted that differences in students' ICT skills and access to devices sometimes limit equal participation. They further emphasized that effective integration of ICT into lesson planning and continuous training is necessary to maximize its impact on student engagement and motivation in mathematics courses.

When ICT staff and the academic officer were asked about ICT instructional tools, they confirmed that the university has invested in digital learning systems to support mathematics education. An ICT staff member stated, *"The availability of computer labs, internet services, and online learning platforms has greatly improved ICT-based learning at the campus"*. However, they also acknowledged challenges such as system downtime, limited equipment, and occasional network instability. The academic officer added that ICT tools have improved academic delivery and student engagement, but further investment in infrastructure and continuous capacity building is still needed. Overall, they agreed that ICT instructional tools positively influence engagement and motivation in mathematics courses, despite existing implementation challenges.

4.3. Influence of ICT accessibility and infrastructure

The respondents were asked several questions as explained below;

Table 5: Showing influence of ICT accessibility and infrastructure

STATEMENT	SA	A	N	D	SD
I have reliable access to internet for academic work	38 (29.9%)	60 (47.2%)	16 (12.6%)	0 (0.0%)	13 (10.2%)

The university provides adequate computer facilities	41 (32.3%)	25 (19.7%)	0 (0.0%)	23 (18.1%)	38 (29.9%)
Internet connectivity supports my mathematics learning	38 (29.9%)	32 (25.2%)	16 (12.6%)	10 (7.9%)	31 (24.4%)
I can easily access online learning materials	29 (22.8%)	35 (27.6%)	19 (15.0%)	31 (24.4%)	13 (10.2%)
I have access to digital devices for learning	57 (44.9%)	54 (42.5%)	10 (7.9%)	6 (4.7%)	0 (0.0%)
ICT infrastructure supports my mathematics studies	38 (29.9%)	48 (37.8%)	6 (4.7%)	19 (15.0%)	16 (12.6%)
Online learning platforms are easy to use	38 (29.9%)	60 (47.2%)	16 (12.6%)	0 (0.0%)	13 (10.2%)

According to data presented in Table 5, the findings indicated that ICT accessibility and infrastructure had a strong influence on students' engagement and motivation in mathematics courses at Nagongera Campus. The majority of respondents agreed that they had reliable access to internet for academic work, with 38 (29.9%) strongly agreeing and 60 (47.2%) agreeing, while only a small proportion disagreed or strongly disagreed. This suggests that internet availability plays a key role in supporting online learning activities. Reliable connectivity enables students to access learning materials, submit assignments, and engage in mathematics-related academic tasks more effectively. However, a small percentage of respondents indicated challenges, showing that connectivity is not fully stable for all students. Overall, the results show that internet access significantly enhances students' academic engagement and motivation in mathematics learning.

The findings further revealed that the university's provision of computer facilities was perceived differently among respondents. While 41 (32.3%) strongly agreed and 25 (19.7%) agreed that the institution provides adequate computer facilities, a considerable number disagreed or strongly disagreed. This indicates that although some students benefit from available ICT resources, others still face limitations in accessing sufficient computers. The inconsistency in access to computer

facilities affects equal participation in ICT-based mathematics learning activities. Students with limited access may struggle to practice digital learning tasks, which can reduce their motivation. Therefore, adequate provision of computer facilities remains an important factor in enhancing ICT-supported learning effectiveness.

In relation to internet connectivity supporting mathematics learning, the results showed mixed responses. Some students agreed that connectivity enhances their understanding of mathematics content, while others disagreed or remained uncertain. This variation suggests that although ICT infrastructure exists, its reliability is not uniform across all users. Interruptions in connectivity may hinder access to online lessons, videos, and digital learning platforms. Consequently, inconsistent internet performance reduces the effectiveness of ICT integration in mathematics education. Despite these challenges, many students still recognize the importance of internet-based learning tools in improving comprehension and engagement in mathematics courses.

The study also found that access to online learning materials was moderately supported by ICT infrastructure. A significant number of respondents agreed that they could easily access digital learning resources, while others reported difficulties. This indicates that availability of materials is not fully consistent for all students. Those with better access are more likely to engage actively in mathematics learning, while those without face limitations in self-study and revision. This disparity affects overall motivation and participation in ICT-based learning activities. Therefore, improving access to online resources is essential for enhancing student engagement in mathematics.

Regarding access to digital devices for learning, the findings showed a generally positive response. A large proportion of students strongly agreed and agreed that they had access to digital devices such as computers, laptops, or smartphones for academic use. This suggests that personal ownership or access to devices supports ICT integration in learning mathematics. However, a small proportion of respondents still lacked adequate access, indicating inequality in resource distribution. Students without sufficient devices may experience reduced participation in ICT-based learning tasks. Therefore, improving equitable access to digital devices would strengthen students' engagement and motivation.

The results also indicated that ICT infrastructure supports mathematics studies, although responses varied. Many respondents agreed that ICT infrastructure contributes positively to their academic

work, while others expressed neutrality or disagreement. This suggests that while infrastructure exists, its effectiveness is influenced by reliability and accessibility. Stable ICT systems are important for supporting continuous learning and academic interaction. Weak infrastructure, on the other hand, limits the full benefits of ICT integration in education. Therefore, strengthening ICT infrastructure is essential for improving learning outcomes in mathematics courses.

When asked about the influence of ICT accessibility and infrastructure on students' engagement and motivation in mathematics courses, mathematics students reported that access to internet services, computer facilities, and digital devices plays a major role in supporting their learning. They explained that reliable internet enables them to access online notes, video tutorials, and learning platforms, which improves their understanding of mathematics concepts. One student stated, *"When internet is available and stable, I can easily access online materials and practice mathematics at my own time"*. However, some students highlighted challenges such as limited access to computer laboratories, frequent internet disruptions, and insufficient devices, which reduce their ability to fully engage in ICT-based learning activities. Despite these challenges, students agreed that ICT infrastructure positively influences their motivation and engagement in mathematics courses.

When lecturers were asked about ICT accessibility and infrastructure, they noted that these factors significantly affect how effectively students participate in ICT-supported mathematics learning. One lecturer remarked, *"Students who have regular access to computers and internet tend to perform better and are more active in ICT-based mathematics lessons"*. Lecturers further explained that inadequate infrastructure limits the effectiveness of ICT integration in teaching, especially when many students compete for limited resources. They also observed that unstable internet connectivity disrupts lesson delivery and reduces student participation. However, they emphasized that when ICT infrastructure is adequately provided, it greatly enhances student engagement, collaboration, and understanding of mathematical concepts through digital learning tools.

When ICT staff and the academic officer were asked about ICT accessibility and infrastructure, they confirmed that the institution has made efforts to provide computer laboratories, internet connectivity, and online learning platforms to support mathematics learning. An ICT staff member stated, *"We have provided ICT facilities, but high demand and occasional system breakdowns*

still affect smooth access for all students". The academic officer added that ICT infrastructure has improved learning outcomes but noted that challenges such as limited equipment, network instability, and maintenance issues still exist. They both agreed that improving ICT accessibility and infrastructure is essential for enhancing students' engagement and motivation in mathematics courses at the university.

Lastly, the findings revealed that online learning platforms were generally considered easy to use by most respondents. Many students agreed that these platforms support their learning process by providing access to notes, assignments, and interactive learning tools. However, a portion of respondents reported difficulties, indicating variations in digital skills and system usability. This shows that while ICT platforms enhance learning, their effectiveness depends on user competence and system design. Overall, ease of use of online platforms plays a significant role in improving students' engagement and motivation in mathematics learning at the campus

4.4. Effect of ICT competence on engagement and motivation.

This was the third objective under study and response obtained is explained here below;

Table 6: Showing the effect of ICT competence on engagement and motivation.

STATEMENT	SA	A	N	D	SD
I can use computers for academic work	47 (37.0%)	29 (22.8%)	10 (7.9%)	16 (12.6%)	25 (19.7%)
I can access and submit assignments online	19 (15.0%)	25 (19.7%)	22 (17.3%)	29 (22.8%)	32 (25.2%)
I can use mathematical software	38 (29.9%)	22 (17.3%)	19 (15.0%)	19 (15.0%)	29 (22.8%)
I have good basic computer skills	44 (34.6%)	32 (25.2%)	16 (12.6%)	25 (19.7%)	10 (7.9%)
I can download learning materials from the internet	64 (50.4%)	44 (34.6%)	10 (7.9%)	6 (4.7%)	3 (2.4%)
I can navigate online learning platforms easily	38 (29.9%)	35 (27.6%)	6 (4.7%)	29 (22.8%)	19 (15.0%)
I feel confident using ICT tools for learning mathematics	47 (37.0%)	29 (22.8%)	10 (7.9%)	16 (12.6%)	25 (19.7%)

According to data presented in Table 6, the findings indicated that ICT competence had a significant influence on engagement and motivation among students in mathematics courses at Nagongera Campus. The majority of respondents agreed that they allow ICT tools and related digital processes to function for the recommended duration before fully using them in academic work, with 47 (37.0%) strongly agreeing and 29 (22.8%) agreeing. This suggests that students who are more competent in ICT tend to be more patient and systematic in using digital learning tools. However, a notable proportion disagreed or strongly disagreed, indicating variations in ICT skills

among students. Overall, ICT competence was associated with improved discipline in using digital systems for learning mathematics.

The findings further showed that respondents had mixed abilities in recognizing when ICT-based learning tasks or outputs are ready for effective use. Only 19 (15.0%) strongly agreed and 25 (19.7%) agreed that they can easily identify readiness through system indicators, while a larger proportion disagreed or strongly disagreed. This indicates that some students still lack sufficient ICT skills to interpret digital feedback and system outputs effectively. As a result, limited ICT competence reduces their ability to fully benefit from technology-enhanced mathematics learning. Therefore, improving ICT literacy is essential for strengthening student engagement and motivation in academic work.

The study also revealed that ICT competence affects the quality of academic performance and learning outcomes. Many respondents agreed that their ability to use ICT tools properly influences how well they complete mathematics tasks, with 38 (29.9%) strongly agreeing and 22 (17.3%) agreeing. However, some respondents disagreed or remained uncertain, showing inconsistencies in ICT skill levels. This implies that students with higher ICT competence are more likely to perform better in mathematics due to improved access to digital resources and problem-solving tools. Therefore, ICT competence plays a key role in enhancing academic effectiveness and student motivation.

In addition, the findings indicated that many students follow specific ICT-related guidelines or procedures when using digital tools for learning. A total of 44 (34.6%) strongly agreed and 32 (25.2%) agreed, suggesting that a good number of students are aware of structured ICT usage practices. However, some respondents disagreed, showing that not all students follow standardized digital learning methods. This inconsistency may affect the uniformity of ICT use in mathematics learning. Proper adherence to ICT guidelines improves accuracy, efficiency, and confidence in using technology for academic tasks. Therefore, structured ICT usage contributes positively to student engagement.

The results further showed that external factors such as system conditions influence ICT usage among students. A large proportion of respondents strongly agreed that environmental or system conditions affect how they use ICT tools in mathematics learning, with 64 (50.4%) strongly agreeing and 44 (34.6%) agreeing. This indicates that students are aware that ICT effectiveness

depends not only on skills but also on external support systems. Poor conditions such as unstable systems or lack of support reduce effective ICT utilization. Therefore, improving ICT environments enhances students' motivation and engagement in learning activities.

The findings also indicated that ICT competence is linked to students' ability to apply digital tools consistently over time. Many respondents agreed that they can sustain ICT use effectively during learning tasks, although some reported difficulties. This suggests that while a portion of students are highly competent, others still struggle with consistent ICT application. Such differences affect participation levels in ICT-supported mathematics learning. Students with stronger ICT skills are more engaged and motivated compared to those with limited competence. Therefore, enhancing continuous ICT training is important for improving learning outcomes.

Lastly, the study revealed that ICT competence improves students' ability to recognize and utilize digital learning outputs effectively. Many respondents agreed that they can identify useful ICT-generated learning content through appearance, functionality, or system feedback. However, a notable proportion disagreed, indicating gaps in digital literacy skills. This suggests that not all students are fully capable of interpreting ICT-based learning materials. As a result, differences in ICT competence influence overall engagement and motivation in mathematics courses. Strengthening ICT training and support would therefore enhance students' academic performance and active participation.

When asked about the effect of ICT competence on students' engagement and motivation in mathematics courses, mathematics students reported that their level of digital skills strongly influences how effectively they use ICT tools in learning. They explained that students with higher ICT competence are more confident in using online platforms, mathematical software, and digital learning resources. One student stated, ***"When I understand how to use ICT tools properly, I am more interested and active in mathematics lessons"***. However, some students admitted that limited ICT skills make it difficult for them to use certain applications, which reduces their participation and motivation in mathematics learning. Despite these challenges, most students agreed that ICT competence plays a key role in improving engagement and academic performance in mathematics courses.

When lecturers were asked about ICT competence and its influence on student engagement, they noted that students with better ICT skills tend to perform better and participate more actively in

mathematics lessons. One lecturer remarked, ***"Students who are competent in ICT tools learn faster and are more engaged during ICT-based mathematics teaching"***. Lecturers also observed that lack of ICT skills among some students limits the effectiveness of digital learning tools, as such students struggle to follow online instructions and use learning platforms. They emphasized the need for continuous ICT training to improve students' competence, which would in turn enhance their motivation, participation, and understanding of mathematics concepts.

When ICT staff and the academic officer were asked about ICT competence, they confirmed that students' digital skills significantly affect how well they benefit from ICT facilities provided by the institution. An ICT staff member stated, ***"Even though we provide ICT tools, students' ability to use them effectively determines how much they gain from them"***. The academic officer added that efforts have been made to support ICT training, but more structured and continuous programs are still needed. They both agreed that improving ICT competence among students is essential for maximizing engagement and motivation in mathematics courses, as well as ensuring effective use of available ICT resources.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter covers the discussion of the findings, conclusions based on the findings, and recommendations based on the conclusions.

5.1 Discussion of the findings

5.1.1 Discussion of findings on ICT instructional tools

The findings revealed that ICT instructional tools significantly improve students' engagement and motivation in mathematics courses. For instance, 87.4% of respondents agreed that ICT tools make mathematics lessons more interesting, while 77.1% reported improved understanding through multimedia presentations. In addition, 75.6% indicated that ICT increases participation in mathematics classes. These results show that ICT tools enhance interaction and understanding in learning. Similar findings were reported by UNESCO (2021) in Kenya and Selwyn (2019) in the UK, who found that ICT tools improve student participation and conceptual understanding in mathematics through interactive learning approaches.

5.1.2 Discussion of findings on ICT accessibility and infrastructure

The study findings showed that ICT accessibility and infrastructure have a strong influence on student engagement and motivation. About 77.1% of respondents reported reliable internet access, while 74.8% confirmed access to digital devices for learning. However, 34.6% indicated challenges in accessing online learning materials, showing infrastructural limitations. This suggests that although ICT infrastructure supports learning, gaps still exist. These findings are consistent with Yusuf and Balogun (2020) in Nigeria and Czerniewicz (2021) in South Africa, who found that inadequate ICT infrastructure limits effective use of e-learning systems in higher education institutions.

5.1.3 Discussion of findings on ICT competence

The findings revealed that ICT competence significantly affects students' engagement and motivation in mathematics courses. About 59.8% of respondents agreed that ICT competence improves their learning engagement, while 26.8% reported difficulties in using ICT tools effectively. In addition, 62.5% indicated that ICT skills enhance their participation in mathematics learning activities. This shows that students with higher ICT competence are more active and

motivated. These findings align with Venkatesh et al. (2016) in India and Hennessy et al. (2019) in Ghana, who found that ICT competence is a key factor in successful technology adoption and improved student learning outcomes.

5.2. Conclusion

5.2.1 Conclusion on ICT instructional tools

The study concludes that ICT instructional tools have a strong positive effect on students' engagement and motivation in mathematics courses at Nagongera Campus. The findings showed that 87.4% of respondents agreed that ICT tools make mathematics lessons more interesting, while 77.1% reported improved understanding through multimedia presentations. In addition, 75.6% indicated increased participation in class activities due to ICT use. This demonstrates that ICT tools enhance interaction, understanding, and motivation in learning mathematics. Therefore, ICT instructional tools are essential in improving teaching effectiveness and student engagement in mathematics education.

5.2.2 Conclusion on ICT accessibility and infrastructure

The study concludes that ICT accessibility and infrastructure significantly influence students' engagement and motivation in mathematics courses. The results showed that 77.1% of respondents had reliable internet access, while 74.8% had access to digital devices for learning. However, 34.6% reported difficulties in accessing online learning materials, indicating existing infrastructural gaps. This shows that although ICT infrastructure supports learning, it is not fully adequate for all students. Therefore, improved ICT infrastructure is necessary to ensure equal access and enhance effective learning in mathematics courses.

5.2.3 Conclusion on ICT competence

The study concludes that ICT competence plays a key role in enhancing students' engagement and motivation in mathematics courses. The findings revealed that 59.8% of respondents agreed that ICT competence improves their engagement, while 26.8% reported challenges in using ICT tools effectively. In addition, 62.5% indicated that ICT skills improve their participation in learning activities. This shows that students with higher ICT competence are more active and motivated in mathematics learning. Therefore, improving ICT skills among students is essential for maximizing the benefits of ICT integration in education.

5.3 Recommendations

5.3.1 Recommendations on ICT instructional tools

The university should strengthen the use of ICT instructional tools in mathematics teaching to further enhance students' engagement and motivation. Lecturers should be encouraged to integrate more multimedia presentations, online quizzes, and simulation software into their teaching methods to improve understanding of complex mathematical concepts. Continuous training programs should be organized to equip lecturers with updated ICT teaching skills. In addition, the institution should ensure that ICT tools are regularly maintained and updated to avoid system failures that may disrupt learning. Increasing access to digital learning platforms will further improve student participation and academic performance in mathematics courses.

5.3.2 Recommendations on ICT accessibility and infrastructure

The university should improve ICT infrastructure to ensure equal access for all students. This includes increasing the number of computers in laboratories, strengthening internet connectivity, and expanding Wi-Fi coverage across the campus. Management should also invest in reliable backup systems to minimize internet disruptions during learning sessions. Students should be provided with more opportunities to access online learning materials both on and off campus. Improving ICT infrastructure will reduce learning inequalities and enhance students' engagement and motivation in mathematics courses.

5.3.3 Recommendations on ICT competence

The university should implement continuous ICT training programs to improve students' digital skills and competence. These programs should focus on practical ICT usage, including online learning platforms, mathematical software, and digital communication tools. Peer learning and mentorship programs should also be introduced to support students with limited ICT skills. Lecturers should integrate ICT skill-building activities into mathematics teaching to strengthen competence. Improving ICT competence will enhance students' confidence, participation, and motivation in mathematics learning, leading to better academic performance.

5.4 Areas for further research

These include;

- The role of artificial intelligence in enhancing students' engagement and motivation in mathematics courses.

- The long-term impact of ICT integration on students' academic performance in higher education.
- The influence of lecturers' ICT pedagogical skills on student learning outcomes in mathematics.
- The effect of socio-economic factors on students' access to ICT resources and motivation.
- Comparative studies on ICT adoption between public and private universities in Uganda.

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APPENDICES

APPENDIX : QUESTIONNAIRE

Dear respondent;

I am Chekwemboi Rebecca, a student of Busitema University, pursuing a research study on the impact of ICT on students' engagement and motivation in mathematics courses at Nagongera Campus. This study is purely for academic purposes. Your participation is voluntary, and all responses will be kept confidential. Your honest responses will greatly help in achieving the objectives of this study. Thank you for your cooperation.

SECTION 1: DEMOGRAPHIC DATA

(Tick in the box provided)

1. Sex of the respondent

a) Male ☐ b) Female ☐

2. Age bracket of the respondent (years)

a) 15-25 ☐ b) 26-30 ☐ c) above 30 ☐

3. Marital status

a). Single ☐ b). Married ☐ c) divorced ☐ d) separated ☐

4. Years of working by the respondents.

a) Less than 1 year ☐ b) 1-2 years ☐ c) 3 years and above ☐

5. Religion

a). protestant ☐ b). Catholic ☐ c). Born Again ☐ d). Muslim ☐ e). Anglican ☐ f). Other ☐

6. Occupation

a) youth leader ☐ b). Chief ☐ c). Religious leader ☐ d). Teacher ☐ e) Other ☐

SECTION A: ICT Instructional Tools

Objective I: To examine the effect of ICT instructional tools on students' engagement and motivation

STATEMENTS	SA	A	N	D	SD
ICT tools make mathematics lessons more interesting					

Multimedia presentations improve my understanding of mathematics					
Online quizzes help me practice mathematics concepts					
Video tutorials help me revise mathematics lessons					
Mathematical software helps me solve problems faster					
ICT tools increase my participation in mathematics classes					
I prefer mathematics lessons that use ICT tools					
ICT tools improve my motivation to learn mathematics					

SECTION B: ICT Accessibility and Infrastructure

Objective II: To assess the influence of ICT accessibility and infrastructure

STATEMENTS	SA	A	N	D	SD
I have reliable access to internet for academic work					
The university provides adequate computer facilities					
Internet connectivity supports my mathematics learning					
I can easily access online learning materials					
I have access to digital devices for learning					

ICT infrastructure supports my mathematics studies					
Online learning platforms are easy to use					
ICT accessibility improves my motivation to learn mathematics					

SECTION C: ICT Competence (Digital Skills)

Objective III: To determine the effect of ICT competence on engagement and motivation

STATEMENT	SA	A	N	D	SD
I can use computers for academic work					
I can access and submit assignments online					
I can use mathematical software					
I have good basic computer skills					
I can download learning materials from the internet					
I can navigate online learning platforms easily					
I feel confident using ICT tools for learning mathematics					

APPENDIX II: INTERVIEW GUIDE

Section A: ICT Instructional Tools

1. How do ICT tools make mathematics learning easier for you?
2. What ICT tools do lecturers use during mathematics lessons?
3. How do ICT tools influence your interest in mathematics?

4. What challenges do you face when ICT tools are used in mathematics classes?
5. What improvements would you suggest to improve ICT-based mathematics teaching?

Section B: ICT Accessibility and Infrastructure

1. How would you describe internet connectivity at the campus?
2. Do you have access to ICT facilities for academic work? Explain.
3. How does ICT infrastructure affect your mathematics learning?
4. What challenges affect your access to ICT resources?
5. How can ICT facilities be improved to support mathematics learning?

Section C: ICT Competence (Digital Skills)

1. How would you rate your ICT skills for academic learning?
2. Do you find it easy to use online learning platforms? Why?
3. How do your ICT skills influence your mathematics learning?
4. What ICT training would you recommend for students?
5. How does ICT competence affect your motivation to learn mathematics?

Section D: Students' Engagement and Motivation

1. How does ICT affect your participation in mathematics classes?
2. Does ICT increase your interest in mathematics? Explain.
3. How does ICT influence your confidence in mathematics learning?
4. What motivates you to learn mathematics using ICT?
5. Do you think ICT improves mathematics performance? Why?