

**THE IMPACT OF ONLINE TEACHING ON LEARNERS' ACADEMIC
PERFORMANCE IN SELECTED SECONDARY SCHOOLS IN JINJA DISTRICT
DURING COVID-19 PERIOD.**

BY

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BU/UP/2020/2835

**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF LANGUAGES
FOR PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
THE DEGREE OF BACHELORS OF EDUCATION LANGUAGES**

BUSITEMA UNIVERSITY

JULY, 2023

DECLARATION

I, Mugabi David hereby declare that this research proposal entitled "The impact of online teaching on learners academic performance in the selected secondary schools in Jinja district" is my original work, except where acknowledged, and has not been submitted before to any university or any institution of higher learning for the award of any under graduate in the pursuit for a bachelor's degree in English/Literature studies.

SIGNED



DATE

13/11/2023.

MUGABI DAVID**APPROVAL**

This is to certify that this research proposal entitled "The impact of online teaching on learners' academic performance in the selected secondary schools in Jinja district" is submitted and accepted with my full consent and approval.

SIGNATURE



DATE

13/11/2023

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ACKNOWLEDGEMENT

I would like to express my deepest gratitude to the following individuals and organizations whose unwavering support and guidance have been instrumental in the completion of this research.

First and foremost, I am profoundly grateful to my supervisor, Madam Nakazinga Racheal, for their invaluable mentorship, encouragement, and expert advice throughout this research journey. Their dedication to academic excellence and commitment to my success have been truly inspiring.

I would like to extend my sincere thanks to the dedicated educators and administrators in the selected secondary schools in Jinja District, whose willingness to participate in this study provided invaluable data and insights. Your cooperation was essential to the success of this research.

I would also like to thank my family and friends for their unwavering support, understanding, and encouragement. Your belief in my abilities and your patience during the late hours of research are deeply appreciated.

Finally, I am grateful to the faculty of Education and science, Nagongera campus and staff of Busitema University for providing me with the opportunity to pursue this research and for fostering an environment of academic excellence.

DEDICATION

I dedicate this research work to my Mother Mutesi Betty. Your unwavering love, support, and encouragement have been the driving force behind my pursuit of knowledge and academic excellence. Your belief in my abilities and your sacrifices have made this achievement possible. This research is a testament to your faith in me and the inspiration you provide daily.

This work is also dedicated to all the learners in our education system who strive for academic success. May the findings of this research contribute to the improvement of their educational experiences and outcomes.

Thank you, Mummy, and all those who have played a part in this journey.

ABSTRACT

This research investigates the impact of online teaching on the academic performance of secondary school learners during the COVID-19 period in Jinja District. The study, conducted in selected secondary schools, aims to analyze the efficacy of online teaching methodologies in comparison to traditional classroom-based instruction. By employing a mixed-methods approach, both quantitative data, including academic performance metrics, and qualitative feedback from educators and students were collected and analyzed.

The research revealed a multifaceted impact of online teaching on students' academic performance. It explored the challenges and opportunities associated with the sudden shift to remote learning during the COVID-19 pandemic. The study examined the availability and utilization of information and communication technology (ICT) resources, pedagogical strategies employed by educators, and the adaptation of students to the online learning environment.

Findings indicate that while online teaching offered flexibility and accessibility, it also posed challenges related to resource availability, digital equity, and pedagogical adaptation. The study identifies correlations between effective online teaching practices and improved academic performance, highlighting the need for tailored support and equitable access to resources for all students.

This research provides valuable insights into the dynamics of online teaching during the pandemic and offers recommendations for policymakers, educators, and stakeholders in the education sector to enhance the effectiveness of online learning and improve academic outcomes in secondary education.

The outcomes of this research contribute to the broader discourse on educational practices in the context of crises and underscore the importance of adapting pedagogical methods to ensure quality learning experiences for secondary school students in the face of unforeseen challenges.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

Education is an important investment that a country could make. Enhancing accessibility to education services is significant in the development of a nation (Torrent 2009). This is because education positively affects socioeconomic behavior such as productivity and demographic characteristics of any population (UNICEF, 2000). It is therefore a social obligation to make the provision of education to all people according to their social status. While teaching/learning can take place in or out of the classroom, the COVID-19 pandemic made an attempt to disrupt the traditional education system worldwide with schools having painful closures for extended periods.

As a result, educational institutions had to adapt the learning system that is based on formalized teaching but with the help of electronic resources known as E-learning embracing the use of computers and the internet. To ensure a steady progress in education, most of the schools embraced online teaching studies which has led to a significant shift from the traditional face to face teaching approach to a network that enables the transfer of education to a large number of recipients at the same time or different times. This research seeks to investigate the impact of online teaching on the academic performance of students in selected schools in Jinja.

1.1.0 Theoretical background

The theoretical background of the study will be based on the connectivism learning theory which is a relatively new learning theory that suggests to combine thoughts, theories and general information in a useful manner. The theory embraces the digital age and accepts that technology is a major part of the learning process and that our constant connectedness gives us opportunities to make choices about learning. Since connectivism deals with technology, it is important to create connectivist classroom through introducing more opportunities for digital learning like online courses, webinars, social networks and blog. Teachers can incorporate connectivism through having classrooms, social media, gamification and simulations.

ICT covers all forms of computer and communications equipment and software used to create, design, store, transmit, interpret and manipulate information in its various formats. Personal computers, laptops, tablets, mobile phones, transport systems, televisions, and

network technologies are just some examples of the diverse array of ICT tools. (<http://www.uq.edu.au/ICT/what-is-ICT> 2012)

Information and Communication Technology refers to any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. Information and communication technology in education can be understood as the application of digital equipment to all aspects of teaching and learning. It is present in almost all schools in advanced countries and is of growing influence, however, for the past three decades, there is a legitimate concern that developing countries have been slow in terms of incorporating the use of ICT equipment to facilitate the teaching and learning process in school (Hubert 2006)

According to World Bank, ICT consists of the hardware, software, network and media for the collection, storage, processing, transmission and presentation of information. This aid constructing knowledge and problem solving through internet- mail, CD-ROMs, databases, video conferencing, enabling explanation of concepts, and communicating ideas by using power point and desktop publishing. (WCEA, 2002).

Mooij, (2007) observed that integrating ICT in an educational context means combining all technologies that can process information and transmit it for purposes of learning and educational development.

Kiyaga, (2013) notes that although science subjects remain the Achilles' heel of Uganda's education, examination results still indicate that online teaching is poorly performed. In some secondary schools there is increasing poor performance in mainly due to shortage of ICT equipment.

1.1.1 Conceptual background

Developments in ICTs have dramatically changed the way information is collected, stored, processed, disseminated and used, thus making it a powerful tool for modernization and development.

The presence of Cyber classrooms in some schools especially secondary institutions has greatly impacted on the learning of students especially those who are offering science subjects. Key science subjects such as Biology, Chemistry, Physics, and Mathematics are simplified for students when taught using Cyber rooms (Ndidde 2009). Cyber schooling has increased student motivation, willingness and generally changed the traditional belief of

saying science subjects are difficult and therefore mostly done by boys. This is so effective in Nabisunsa secondary school which is a girls' school (Uganda report 2009).

Another impact of ICT on learning as reported by learners is that it makes learning more interesting and exciting as well as improving the level of participation on the part of learners compared to other subjects where there is no integration of ICT at all.

Parents believe that using computers may increase their children's academic achievement and future job opportunities (Ortiz et. al, 2011); therefore, they buy computers with an internet connection to help their children succeed in school (Turow, 1999).

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1.1.2 Historical background

The history of ICTs in Uganda was a short but intense one. Uganda started embracing ICTs as part of its economic development strategy when the first mobile phone service came onto the Ugandan scene in December 1994. The telecom company Celtel, using the GSM 900 technology mainly targeted high end users like business people and the diplomatic community. The cost of owning and maintaining a mobile phone was so high that that having a car was estimated to be a cheaper undertaking. Owning a mobile phone was a status symbol.

Things began to change however, with the entry into the market, of the South African giant Mobile Telecommunications Network (MTN) in 1998. Calls became cheaper, and the network was extended to rural areas, going beyond Kampala as the hub for the mobile telephone industry. More players like Airtel, Warid and Zain entered the market with more diversified products making communication even cheaper. More internet providers also came on the scene and the cost, while still one of the most expensive in the world, became much cheaper than before.

Since then, the ICT sector had grown rapidly. The industry grew by 30.3% in the 2009/10 financial year accounting for 3.3% of the GDP. Over 50% of the population were subscribed to mobile phone service provider and the number of internet users increased from 2,475,812 in 2008 to 4,178,085 in 2010 (168% of growth). Millions own smart phones, a fact driving digital penetration even in the rural countryside. Internet users were estimated at 6.5million as of 2012, accounting for 18.5 percent of the country's population of 35 million. The

increase in internet usage had been further fueled by the country's youth bulge. Uganda had the world's youngest population, with over 78% below 30 years. These were more embracing of ICTs than their older, and inevitably old school, parents.

The liberalization of the communication industry also led to an increase in FM radio stations which by then numbered in hundreds and as a result up to 80 percent of all households especially in the countryside relied on radio for news and information. The "Ebimeeza" (people's parliaments) callin talk shows were popularized and people began to freely debate the most important political and social issues of the day. There were also dozens of TV stations and a couple of daily newspapers serving different audiences in the country.

The explosion in ICTs was aided by friendly ICT policies which created an enabling environment for ICT entrepreneurs to blossom. The National Information and Communication Technology Policy of 2003 was intended to help the government implement more successful long term national development programmes like the Poverty Eradication Action Plan (PEAP), the Plan for Modernization of Agriculture (PMA), and others, by ensuring that timely and relevant information was available at all levels of implementation.

The Ministry of Information and Communications was established in June 2006 with a mandate of "providing strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT sector". Developments in ICTs have dramatically changed the way information was collected, stored, processed, disseminated and used, thus making it a powerful tool for modernization and development. Inevitably however, the growth in ICTs also culminated into social, political and economic situations that were not equally desirable for all the stakeholders

The free discussions by ordinary people of social-political issues on several radio stations did not augur well for some in the government who decided to start clamping down on these discussions. 'Ebimeeza' were banned by the Broadcasting Council in September 2009

Radio and TV stations as well as newspapers that were deemed to "spread inflammatory material" were threatened and some were closed which forced others into self-censorship

Then came the explosion in Social Media growth. Millions of Ugandans were signed up on Face book, Twitter and many young elite activists were endlessly sharing their opinions on blogs across the internet. This was aided by the increasing ownership of smart phones that were replacing old,

‘Call-only’ handsets that were now derided as belonging to ‘stone age’. Face book and Twitter were blocked by the government during the 2016 presidential election over fears that people might announce premature results. Officials were still warning of the potential dangers of social media to Uganda’s stability.

Cyber-crime was also increasing in Uganda. The country’s tax collecting body, The Uganda Revenue Authority (URA)’s systems were hacked into in 2013 leading to an estimated sh2billion (\$700,000) tax loss in vehicle registrations. The telecom giant MTN also lost sh15 billion (US\$5.7 million) in Mobile Money fraud, a scam made possible by insider collaboration. Many companies desisted from reporting such crimes for fear of scaring away potential clients so it’s possible the problem was more widespread than reported. Such crimes were complex and difficult to prosecute by a justice system to which they were a completely new development.

1.1.3 Contextual background

The government had so far failed to walk this fine line. Sweeping legislations had been put in place that were threatening the rights of individuals’ constitutional rights to privacy and self-expression

The regulations put in place and their enforcement sometimes went beyond their mandate. In March 2012, the Government of Uganda tabled the Communications Regulatory Authority Bill, a major piece of legislation ‘intended to consolidate and harmonize existing and overlapping laws.

Citing what it calls ‘security ramifications of online activity that had begun to permeate the national consciousness’ Government under the Ministry of Information and Communications Technology developed a National Information Security Strategy (2011) which aimed at addressing security challenges that were envisaged in the era of technological advances.

Other laws that came before or at the heels of this strategy included: the Regulation of Interception of Communications (RIC), 2010, which parliament hurriedly passed in the aftermath of the July 2010 bomb attacks, and allowed for interception of communications and possible intrusion into personal communications. It also required telecom companies to collect customers’ information, including name, address and identity number, and to take other measures to enable interception. A registration of all SIM card owners in Uganda

exercise concluded on May 31, 2013, which made the monitoring easier. As a matter of fact, an explosive last year stated that

Uganda's government had been spying on the opposition and the media for years, using spying equipment supplied by a UK technology firm.

The Anti-Terrorism Act No.14 of 2002 gave security officers powers to intercept the communications of a person suspected of terrorist activities and to keep such persons under surveillance. The scope of the interception and surveillance included letters and postal packages, telephone calls, faxes, emails and other communications, as well monitoring meetings of any group of persons. Other powers included the surveillance (including electronic) of individual's movements and activities, and accessed to their bank accounts.

Older laws such as the Anti-Terrorism Act (2002); Press and Journalist Act of 2000 and the Regulation of the Interception of Communications Act of 2010 remained on the books to negate these freedoms. Since 2010, a number of other restrictive laws had also been drafted such as the Public Order Management Act (2013) which sought to regulate the conduct of public meetings as well as discussion of issues at such meetings and the 2010 Press and Journalists Amendment Bill intended to enforce annual registration and licensing of newspapers by the statutory Media Council.

Even those laws exclusively focused on fighting cyber-crime were suspiciously viewed by some due to the dubious language in which they were crafted:

- The computer misuse act of 2010 was intended to “ensure the safety and security of electronic transactions and information systems and other related matters”
- The Electronic Transaction Act 2011 was “to provide for the use, security, facilitation and regulation of electronic communications and transactions and to provide for related matters”
- The Electronic Signatures Act, 2011 aimed “to make provision for and to regulate the use of electronic signatures and to provide for other related matters”

It was those “other related matters” that analysts believed could in the end make these laws go beyond the limits of their jurisdiction, and negated some of the freedoms enshrined in other government laws that guaranteed peoples' freedoms to use and benefit from the country's ICTs revolution

Government therefore needed some self-restraint to avoid overzealousness in controlling people's enjoyment of the information age. The ICT industry in Uganda had a number of stakeholders who played different complementary roles. These included the Government that played regulatory role, private sector that invested in technology and established ICT businesses, the donor community that supported the sector financially and technically, civil society and the media, while citizens consumed and used the proceeds from the industry. A framework needed to be worked out to protect the stakeholder roles and to promote positive interrelationships in the ICT ecosystem and thus increased the positive impact of ICTs in Uganda without harming the interests of any stakeholder.

Therefore, the use of ICT tools in Uganda grew so rapidly in the last four decades as many Ugandans have become computerized especially in the use of smart phones, I Pads, and Laptops. This has improved both the quantity and quality of the academic work and results since access to internet was available which made research by both the teachers and the learners easy and possible.

1.2 Statement of the problem

Students' learning remained central in any academic achievement debate (Opira, 2018). ICTs provided a window of opportunity for educational institutions like secondary schools to harness and use technology to complement and support the teaching and learning process. This was usually aimed at improving the academic performance. However, many challenges have come especially COVID19 in secondary school leaving children at home for two years. This forced schools to introduce online teaching however in Jinja district it lowered down the academic performance of the students especially those ones who could not access the ICT gadgets.), Jinja is always among the worst performing districts in the country (Kayiwa, 2022). It is against this background of looking at ICT as a medium of instruction in teaching and learning that this study will conceive, Therefore, the study will attempt to establish the availability and accessibility of ICT on students' academic performance in selected secondary school in Jinja district.

1.3 Purpose of the study

The purpose of the study will be, to investigate the impact of online teaching on the academic performance of students in the selected secondary schools in Jinja district.

1.4 Specific objectives

1. To investigate the impact of using ICT tools in teaching and learning on students' academic performance in the selected secondary schools in Jinja District.
 - This objective aims to understand how the integration of ICT tools, such as online platforms, educational software, and multimedia resources, has influenced students' academic performance. It will assess whether the use of ICT tools has resulted in improved learning outcomes, increased engagement, or enhanced understanding of subject matter among students.
2. To examine the effect of the availability of ICT resources on students' academic performance among selected secondary schools in Jinja District.
 - This objective focuses on assessing how the availability of ICT resources, including computers, internet connectivity, and digital learning materials, has affected students' academic performance. It will explore whether schools with better access to ICT resources have shown higher levels of academic achievement compared to schools with limited resources.
3. To assess the effect of the accessibility of ICT resources on students' academic performance in the selected secondary schools in Jinja District during the COVID-19 period.
 - This objective specifically considers the impact of the accessibility of ICT resources during the COVID-19 pandemic when online teaching became the primary mode of instruction. It aims to understand how students' access to devices, reliable internet connectivity, and online platforms has influenced their academic performance. It will explore whether students with better accessibility have experienced improved academic outcomes compared to those with limited access.

1.5 Research questions

The following research questions will be examined.

- i) To what extent has the use of ICT tools impacted on students' academic performance in the selected secondary schools in Jinja district.
- ii) How has the availability of ICT resources affected the academic performance of students in the selected secondary schools in Jinja district?
- iii) How far has the accessibility of ICT resources in secondary schools of Jinja district impacted the academic performance of the learner?

1.6 Scope of the study

1.6.1 Geographical scope.

The study will be carried out in five selected secondary schools in Jinja district these schools include. Busoga college Mwiri, MM College Wairaka, Busede college, Kakira High school, and Kakira secondary school. Jinja district is located along 80 kilometers from Kampala capital city of eastern Uganda. It is neighbored by Buikwe district in central, Mayuge in the east, Iganga in eastern, Kamuli in northern. It has got 7 government aided secondary schools and 10 private secondary schools. The researcher will choose the geographical location because it is his area of work and residence sleeping at Mwiri hill therefore collecting data will be easy and cost effective.

1.6.2 Content scope

Specifically, the study will concentrate on examining the impact of online teaching on students' academic performance in selected secondary schools in Jinja district. Where the independent variable is online teaching and dependent variable is the student academic performance

1.7 Significance of the study

The aim of choosing the study about the impact of online teaching on the academic performance of students in selected secondary schools in Jinja district is to give a better understanding of the

students and teachers' knowledge and attitudes concerning ICT and its impact on students' academic performance in secondary schools in order to adapt any future development programs and education campaigns for integration of ICT tools in the teaching and learning process for better academic results among secondary schools. Therefore, by providing information on the use of ICT tools in education in secondary schools in Jinja district, the study will help secondary schools' teachers and headteachers to design measures for ICT tools usage in secondary schools in Jinja district. The measures would be directed to different stakeholders like district education officer and ministry of education and sports.

The study will also mean to help in understanding how the teachers would cope with advancement in science and technology in order to improve the delivery lessons in classroom.

Furthermore, the negative factors for the use of ICT tools in teaching and learning identified would lead to the development of more realistic sensitization measures for use in teaching. The information generated would be used to evaluate programs targeting to increase the use of ICT in the teaching and learning process in classrooms in secondary schools.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter explores literature presented by various authors about the impact of information and communication technology (ICT) on the student's academic performance especially in science subjects. The literature is organized in three sub sections. The first one contained literature on how the availability of ICT resources had impacted on student's academic performance in science subjects, the second one explores literature on how the Accessibility of ICT resources had improved the students' academic performance in sciences and the third presents the general impact of ICT on the students' academic performance in science subjects.

2.1 Availability of ICT resources

The availability of ICT resources could enhance learning by making education less dependent on differing teacher quality and by making education available at home throughout the day (Mbweza, 2002).

Bonnet (1997) argued that the use of ICT could positively transmit knowledge to students. Furthermore, the availability and use of ICT could help students exploit enormous possibilities for acquiring information for schooling purposes and could increase learning through communication (Riel, 1998).

According to Lubega (2009), ICT use was supported by the availability of ICT equipments, internet connectivity and educators being trained in ICT, integration in various institutions of learning, which in turn yielded the intended purpose of the resources.

Media availability varied depending on such things as child's age, gender, race/ethnicity, family socioeconomic status, and so forth (Roberts et al., 1999, p.9). The economic level of the countries could also affect the availability of media for school-age children either at school or at home.

Notten and Kraaykamp (2009) stated that science performance was positively affected if there was a positive reading climate and computer availability. They also mentioned that "the

absence of a television set at home seemed to narrow a child's worldview and knowledge of science.”

The use of Information and Communication Technology (ICT) was becoming an integral part of education in many parts of the globe; Uganda was not left behind as ICT gradually found its way into the educational system despite chronic limitations brought about by economic disadvantages.

According to Gbamanja (1989 p.131) Education was a process which sought to change the behavior of a learner. Behavior in this sense referred to the way we changed the learner, his or her thinking, his or her feelings and his other overt actions (Hergenhahn and Olson 1997)

Osborne, J. Hennessy (2003) confirmed that, although the chalk board, textbooks, radio, TVs and Films had been used for educational purpose over the years, none had quite impacted on the educational process like computer. While television and film impacted only on the audio-visual facilities of users, the computer was capable of activating the senses of sight, hearing and touch of the users.

Belts, S (2003) confirmed contributions of ICT to quality learning in science which resulted into better students' academic performance. He pointed out that ICT offered particular opportunities to enhance learning by making more time available for predicting and searching for explanations.

Also, ICT applications allowed pupils to work at their own speed hence were at an advantage of understanding concepts at their own speed resulting into improved academic performance. Betts's (2003) further confirmed that the use of ICT could enhance the quality of learning where its use was tailored to lesson objectives and the needs of pupils. Many studies had found positive effect associated with technology aided instruction mc Farlane, A. sakellarios (2002).

The key finding of the research were as follows; use of ICT either as a tool in a practical investigation or as a substitute for the laboratory-based elements of an investigation could aid theoretical understanding and electronic communications were to be used not just to disseminate information but to create a continuity of learning.

Oshodi (1999) confirmed that awareness towards the use of communication and information technology (ICT) was increasing in the classroom in the developing world such that were

verbalization or over verbalization of words alone in the classroom to communicate ideas, skills and attitudes to educate learners was futile, that was incapable of producing any good results or ineffective.

Scott Reid (2002) in his study found out that students could benefit from incorporation of ICT in classroom teaching and learning process. For teachers and their students, the availability of modern computers, peripherals, networking and resources within an increasingly diverse range of technologies was an essential part of learning and teaching in the 21st century. ICT constituted an input in the student learning process that could help produce better learning output.

The availability of ICT resources could also enhance learning by making education less dependent on differing teacher quality and by making education available at home throughout the day (Mbweza, 2002). Bonnet (1997) argued that the use of ICT could positively transmit knowledge to students and the availability of visual digital technology (such as animation, simulation and moving images) involved students and reinforced conceptual understanding.

Furthermore, the availability and use of ICT could help students exploit enormous possibilities for acquiring information for schooling purposes and could increase learning through communication (Riel, 1998). According to the Swedish National Agency for School Improvement (2008), ICT provided a positive impact on learning and student performance when it became an integrated element in the classroom and teaching. ICT use also encouraged development from a teacher focused or teacher led model to a more student focused model in which students worked together, made their own decisions and took an active role in learning (Swedish National Association for School Improvement, 2008).

Davis (2000) asserted that increased availability of ICT was especially useful for students who suffered from learning disabilities since ICT use allowed teachers to prepare suitable tasks for individual needs and each individual more effectively. However, authors like Cox (1999) believed that allowing certain students to use computers distracted them from focusing on the task at hand. Central to the argument of availability are the issues of whether or not the teachers and students had ample and convenient access to computers and their accessories let alone the software that was necessitated in the context of their day today research, collaboration, teaching and student evaluation (Fabry, et al., 1997).

Furthermore, students and teachers were to have confidence in these facilities, which were in turn reliant on the facilities' reliability or degree to which the teachers and students were

sure that they would have access to them at all expected times and utilize them predictably to the betterment of their academic work, an issue on which consensus was enormous as was clear from ICT in education scholars like Russell (1997), Ross (1997), Guha (2000), Mumtaz (2000) and Pelgrum (2001).

The study revealed that computers were but a subset of the information communication technology facilities which were necessary in schools but they had to be furnished with quality accessories, installed with appropriate software and linked to necessary networks to allow access to rich resources beyond the school rather than serve as a resource for minor typesetting and other word processing activities. Whilst the above studies attempted generally to explain how the availability of ICT affected learning, it did not look at how particular ICT tools clearly affected students' learning.

2.2 Accessibility of ICT resources:

Access to ICT infrastructure and resources in secondary schools was a necessary condition to the integration of ICT in education (Charlotte, 2009).

Effective integration of ICT in schools was to call for a whole institution to be networked so as to ensure access to multimedia and learning rich resources via the school's internet and ensure the use of the internet by the students and teachers whenever they were in or out of school. The computer laboratories and needed to be sufficient in number to allow ready access by students and staff in most subjects across the school. A wide range of peripheral and remote working devices, including video conferencing, was provided and integrated into the curriculum and large and small group presentation facilities were readily available (school net Africa, 2004).

Even when computers were available, in some school's evaluation of the actual impact of ICT was rare; computers were often used in specific offices or by specific personnel and many teachers, students and subject areas still lacked access to ICT (wirns and lawyer 2007)

According to Eric Blantz (2010), lack of consistent and affordable electricity was one of the greatest limitations for use of ICT in schools, especially schools in remote parts of the developing world which had no electricity and where electricity was available, such power was usually extremely un reliable or so unstable that it posed a threat to un protected electronic equipment. So, he provided an alternative to be solar panels to be installed in schools and use diesel generators. Despite the above desired situation, most institutions in Africa faced barriers to effective integration of ICT in the teaching and learning process;

limited infrastructure in terms of satisfactory physical conditions of laboratories and the subsequent accessibility of the resources (ICT) to the learners (Singh, 1993). Many commercial and academic developers of educational multimedia had focused primarily on information access and presentation (Singh, 1993).

However, it was easy to see that multimedia had tremendous potential to enhance the vividness with which information could be presented and eased with which it could be accessed; the main barriers to learning were not generally that appropriate information was difficult to access or badly presented. The problem had more to do with that information (Shank & Kass, 1996).

Barriers, associated with ICT integration that fell within the physical realm were beyond the direct control of the teacher (Loveless, 1996). These barriers centered on accessibility and infrastructure which included decisions about purchasing, locations of wiring drops, and decisions regarding the placement of computers in centralized labs versus placement of computer pods in classrooms. Placing computers in centralized laboratories might provide students with equitable and efficient exposure to technology but severely limited the technology's accessibility for classroom instruction (Loveless, 1996).

Lubega (2009) noted that there was an impact of ICT on learners and learning as was reported by those learners that, there had been increased access to qualitative educational materials especially through surfing on the Internet. This access resulted into access to updated educational information. This made learners more enthusiastic to put in more effort and performed better just like their colleagues in other schools and countries.

Technology was one of these factors; that is why it was important to explore how we could explain students' Science and Math achievements by looking at their use and accessibility of computers and related technologies, as suggested by Subrahmanyam et al. (2001).

Ali (2013) said that if teachers could not access ICT resources, then they would not use them. Therefore, access to computers, updated software and hardware were key elements to successful adoption and integration of technology. A study found that access to technological resources was one of the effective ways to teachers' pedagogical use of ICT in teaching.

According to Opira (2006), laboratories deny teachers the flexibility of deciding when technology was to be incorporated into instruction and might send the message to students that computers were not central to learning or the activities in their classrooms. In addition,

physical limitations of the classroom including size and location of desks, often limited choices of room arrangement and did not provide the space that was necessary to add pods of computers to be used as technology centers.

For all its revolutionary aspects, though, ICT capabilities weren't evenly distributed. Simply put, richer countries and richer individuals enjoyed more access and thus had a greater ability to seize on the advantages and opportunities powered by ICT.

Consider, for example, some findings from the World Bank. In 2016, it stated that more than 75% of people worldwide had access to a cell phone. However, internet access through either mobile or fixed broadband remained prohibitively expensive in many countries due to a lack of ICT infrastructure. Furthermore, the World Bank estimated that out of the global population of 7.4 billion people, more than 4 billion didn't have access to the internet. Additionally, it estimated that only 1.1 billion people had access to high-speed internet.

In the United States and elsewhere, this discrepancy in access to ICT had created the so-called digital divide. The World Bank, numerous governmental authorities and non-government organizations (NGOs) advocated policies and programs that aimed to bridge the digital divide by providing greater access to ICT among those individuals and populations struggling to afford it. These various institutions asserted that those without ICT capabilities were left out of the multiple opportunities and benefits that ICT created and would therefore fall further behind in socioeconomic terms. The United Nations considered one of its Sustainable Development Goals (SDG) to "significantly increase access to information and communications technology and strived to provide universal and affordable access to the internet in least developed countries by 2020."

Economic advantages were found both within the ICT market as well as in the larger areas of business and society as a whole.

Within the ICT market, the advancement of ICT capabilities had made the development and delivery of various technologies cheaper for ICT vendors and their customers while also providing new market opportunities. For instance, telephone companies that once had to build and maintain miles of telephone lines had shifted to more advanced networking materials and could provide telephone, television and internet services; consumers then enjoy more choices in delivery and price points as a result.

Accessibility and use of ICT in Uganda allowed students to investigate more thoroughly the real world (Reginald Grégoireinc., Bracewel l& Laferrière, 1996; Riel, 1998). They could

more readily access information sources outside the classroom and could use tools to analyze and interpret such information. Information might be accessed through online systems or through data logging systems (Riel, 1998) The technologies allowed them to receive feedback, refine their understanding, build new knowledge and transfer from school to non-school settings (Committee on developments in the Science of Learning, 2000). In the past, this had been difficult to provide in schools due to logistical constraints and the amount of material to be covered all of which can now be addressed with ICT. What could be learned was broadened and deepened (Réginald Grégoireinc. et al., 1996).

Barriers, associated with ICT integration that fell within the physical realm were beyond the direct control of the teacher (Loveless, 1996). These barriers centred around accessibility and infrastructure and included decisions about purchasing, locations of wiring drops, and decisions regarding the placement of computers in centralized labs verses placement of computer pods in classrooms. Placing computers in centralized laboratories might provide students with equitable and efficient exposure to technology but severely limited the technology's accessibility for classroom instruction (Loveless, 1996). Laboratories denied teachers the flexibility of deciding when technology was to be incorporated into instruction and might send the message to students that computers were not central to learning or the activities in their classrooms.

In addition, physical limitations of the classroom including size and location of desks, often limited choices of room arrangement and did not provide the space that was necessary to add pods of computers to be used as technology centres.

Teaching was becoming one of the most challenging professions in their society where knowledge was expanding rapidly and much of it was available to students as well as teachers at the same time. Modern developments of innovative technologies had provided new possibilities to teaching professions, but at the same time had placed more demands on teachers and students to use these new technologies in the teaching and learning process (Jung, 2005).

Therefore, there was widespread change across the world to infuse ICT into education.

Recent research by British Education Communication and Technology Agency (BECTA) has highlighted user-ability of ICT resources as one of the five key pillars of successful integration of ICT in schools (National Council for Curriculum and Assessment UK, 2004). In developed countries, teachers were fully using ICT in all aspects of their professional life to improve their own learning and the learning of their students (Davis, 2000). They used ICT to assist students assess their own learning in completing specific personal projects. It

was natural for teachers to collaborate with other colleagues in sharing experiences to solve problems. ICT became a stimulus for exciting new teaching and learning opportunities (UNESCO, 2002a).

It was the skill and attitude of the students and teachers that determined the effectiveness of technology integration into the curriculum (Bitner & Bitner, 2002). Once teachers and students developed skills, they were to begin to find ways to integrate technology into the teaching and learning process and demonstrated its use to others. If learning was the impetus that drove the use of technology in the school, teachers and students were to be partners in the learning process, altering traditional paradigms of the teacher providing wisdom and the student absorbing

2.3 ICT and academic performance

When properly used, information and communication technology held great promise to improve academic performance of learners in addition to shaping work force opportunities, Poole (1995). Miller (2000), recognized that technology-based teaching might not be essential in all classes but generally it was most facilitative as a result of providing relevant examples and demonstrations; changing the orientation of the classroom; preparing students for employment; increasing flexibility of delivery; increasing access; and satisfying public demands for efficiency. "The whole purpose of using technology in teaching was to give better value to students". This better value was meant to also impact the learners'/students' performance.

Louw (2008), argued that ICT held much promise for use in curriculum delivery. Thus, technology could effectively improve teaching and learning abilities, hence increasing learners' performances. As Castro and Cawthera (2003) posited, ICT had the means to aid in the preparation of learners by developing cognitive skills, critical thinking skills, information access, evaluation and synthesizing skills.

The application of Information and Communication Technology in classroom had the capacity to provide higher interactive potential for students and teacher in order to develop their individual, intellectual and creative ability, Belts. S (2003)

Students' academic performance was the extent to which a student had achieved his or her educational goals and in order to achieve the above educational goals in sciences,

information and communication technology (ICT) was an essential ingredient. Agommuoh and Nzewi (2003)

The application of Information and Communication Technology (ICT) such as internet applications, CD-ROMs, Video technology and various computer attachments and software programs had caused many changes in the teaching and learning processes in schools. Scott Reid (2002) The presence and use of the ICT resources by the students and teachers provided an avenue of Availability of internet, computers, projectors, TVs, computer Labs, video conferencing etc. Accessibility in the Library, Computer Lab, classrooms, Resource centres, dormitories etc.

These interactions provided feedback which acted as a reinforcement towards the learning Process. Multimedia applications like games, drills, animation and other graphical applications provided practices that took the form of questions (stimulus) and answers (response) frames which exposed the students to the subject in gradual steps consequently generating more interest in the subject matter which in the long run affected their academic performance and gave them the desire to try and use this acquired knowledge in a different setting outside school.

The impact of ICT on learning was then in relation to use of digital media, primarily computers and internet to facilitate teaching and learning. ICTs were the technologies used in conveying, manipulation and storage of data by electronic means, they provided an array of powerful tools that might help in transforming the present isolated teacher-centred and text-bound classrooms into rich, student-focused, interactive knowledge environments.

To meet these challenges, learning institutions had to embrace the new technologies and appropriate ICT tools for learning. The relationship between the use of ICT and student performance in education was not clear, and there were contradictory results in the literature. Earlier economic research had failed to provide a clear consensus concerning the effect on students' achievement.

Starting from this point, the aims of this study were two-fold: first, we summarized the main findings of this extensive literature and second, we gave two complementary explanations on the contradictory results. Our first explanation was that most of the literature had focused on direct effects of ICT while it was more appropriate to look at the indirect effects through the traditional channels. Since student performance was mainly explained by a student's characteristics, educational environment and teachers' characteristics, ICT could have an impact on these determinants and consequently the outcome of education. The differences

observed in the performances of students were thus more related to the differentiated impact of ICT on the standard determinants.

The direct link between ICT use and students' performance had been the focus of extensive literature during the last two decades. Several studies had tried to explain the role and the added value of these technologies in classrooms and on students' performances.

The first body of literature explored the impact of computer uses. Since the Internet revolution, there had been a shift in the literature that focused more on the impact of online activities, that was the use of Internet, use of educative online platforms, digital devices, use of blogs and wikis, etc.

Looking at the link between ICT and student performance seemed then a misunderstanding of the role and nature of these technologies. In fact, since ICT was general purpose technology (GPT), it needed to be specified in order to meet the needs expressed by students and to be adapted to the local context and constraints (Antonelli, 2003; Ben Youssef, 2008).

A variety of models of usages could be identified leading to the same outcome. ICT brought widened possibilities for the learning processes that were independent from place and space. ICT also allowed more flexible (asynchronous) and more personalized learning. It offered new methods of delivering higher education. Taking advantage of these opportunities needed a profound change in the organization of the higher education system.

By then, the role of Information and Communication Technology (ICT), especially internet in the education sector played an important role, especially in the process of empowering the technology into the educational activities. Education sector could be the most effective sector to anticipate and eliminate the negative impact of ICT. Technology (internet) in another side could be the most effective way to increase the student's knowledge.

Being aware of the significant role of ICT (internet) in our life, especially in the educational activities, education authorities were to be wise enough in implementing the strategies to empower ICT in supporting the teaching and learning process in the classroom. ICT was not just the bloom of the educational activities, but also it would be the secondary option to improve the effective and meaningful educational process.

The main purpose of the Strategy for Information and Communication Technology Implementation in Education was to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities.

There were some unavoidable facts in the modern education. **First**, the ICT had been developing very rapidly then. Therefore, in order to balance it, the whole educational system was to be reformed and ICT was to be integrated into educational activities.

Second, the influence of ICT, especially internet (open-source tool) could not be ignored in our student's lives. So, the learning activities were to be reoriented and reformulated, from the manual source centered to the open-source ones. In this case the widely use of internet access had been an unavoidable policy that was to be anticipated by schools' authorities.

Third, the presence of multimedia games and online games by internet had been another serious problem that was to be wisely handled by the educational institutions. The students could not be exterminated from this case. They could have and did with it wherever and whenever they wanted. Schools, as a matter of fact, did not have enough power and time to prevent or stop it after school times. Meanwhile, most parents did not have enough time to accompany and control their children. So, the students had bigger opportunities to do with multimedia games or online games or browsing the negative and porn sites. Having been addicted, the students had too little time to study, and even did not want to attend classes.

In such situation, education institutions played an important role to eradicate these problems. One of which was by facilitating the students to do edutainment or educational games. Schools could let their students be familiar with educational games adjusted by their teachers. Besides, they could also support and facilitate their students to have their own blogs in the internet. A lot of Web Blog providers were free to the users, such as Word Press. In their blogs, the students could create and write something, like an article, poem, news, short stories, features, or they could also express their opinion by an online forum provided in the internet. They were able to share experiences throughout their blogs to others from all over the world. The researcher thought it would be an interesting activity for them, and it would lessen their time to visit the negative or porn sites that existed.

By doing so, the researcher thought the young generation would get more and more information and knowledge by browsing in the internet. They could also create innovation in web design that it was to be out of the formal curriculum content, but it would be useful for their future.

Fourth, the implementation of ICT in education had not been a priority trend of educational reform and the state paid little attention to it. Therefore, there was to be an active

participation, initiative and good will of the schools and the government institutions to enhance ICT implementation at school.

Fifth, the teachers had to be the main motivator and initiator of the ICT implementation at schools. The teachers had to be aware of the social change in their teaching activities. They had to be the agent of change from the classical method into the modern one. They had also to be part of the global change in learning and teaching modification.

Educational digital resource sharing and e-learning was emerging as a viable means to improve the quality of education in Uganda. The digital divide in Uganda was reducing, because many schools across the country had acquired ICTs and this had given rise to great demand for digital resources (such as PowerPoint presentations) to aid the teaching and learning process, yet materials on international e-learning systems were not prepared and categorized according to the Ugandan curriculum. Because of this challenge, many schools were developing websites and publishing digital educational resources on eLearning sections of their websites. Many individuals and companies had also established online platforms for eLearning and resource sharing.

E-learn Uganda was a Ugandan based platform trying to improve the access to secondary school content in Uganda. The Vision for E-learn Uganda was a dream that instead of taking long hours on social media, students could also access content for their level on our platform. “We realized that most students across the country accessed internet but, in most cases, used it to access only social media.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter deals with the methodology that the researcher adopted in conducting the study. It discusses the research design, population, study area, sampling strategies, data collection instruments, data quality control, research procedure and the data analysis techniques employed in the study.

3.1 Study design

The study employed a cross-sectional research design. Cross-sectional was designed to allow the study of the population at one specific time and the difference between the individual groups within the population to be compared. It also provided for the examination of the co-relationship between

ICT and students' academic performance in sciences specifically from selected secondary schools of Jinja District seeking the views of the students, teachers and administrators.

3.2 Area of study

The researcher selected Jinja District in Eastern Uganda as the study area for investigating the impact of online teaching on learners' academic performance in selected secondary schools during the COVID-19 period. Jinja District, like other regions in Uganda, experienced the effects of the COVID-19 pandemic, which resulted in the closure of schools and the adoption of online teaching as an alternative mode of instruction.

Given the circumstances of the COVID-19 pandemic, the researcher identified Jinja District as an appropriate study area to examine how online teaching has affected learners' academic performance during this challenging period. The closure of schools and the shift to online learning have created a unique educational context that warrants investigation.

Jinja District, with its diverse educational landscape and infrastructure, provides a suitable setting to explore the impact of online teaching on learners' academic performance. The district is known for its educational institutions and has a significant number of secondary schools that have implemented online teaching methods to varying degrees.

By focusing on Jinja District, the researcher can gather data on the effectiveness of online teaching in maintaining or enhancing learners' academic performance during the COVID-19 period. This includes assessing the availability of necessary technological resources, identifying challenges faced by both students and teachers in adapting to online learning, and evaluating the overall impact on learners' academic outcomes.

In summary, the researcher selected Jinja District in Eastern Uganda as the study area to investigate the impact of online teaching on learners' academic performance in selected secondary schools during the COVID-19 period. The district's educational landscape, coupled with the unique circumstances brought about by the pandemic, make it an appropriate setting to explore the effects of online teaching on learners' academic outcomes in this challenging context.

3.3 Information sources

This information source provides a brief overview of the geographical scope of the study conducted in Jinja District, Eastern Uganda. The study focuses on investigating the impact of online teaching on learners' academic performance in five selected secondary schools during the COVID-19 pandemic. The geographical scope includes Jinja District's location, its neighbouring districts, and the specific schools chosen for the study.

Location and Neighbouring Districts: Jinja District is situated approximately 80 kilometres east of Kampala, the capital city of Uganda. It is bordered by several districts, including Buikwe to the west, Mayuge to the east, Iganga to the northeast, and Kamuli to the north. This central location within Eastern Uganda allows for a representative sample of schools within the region.

Selected Secondary Schools: The study focuses on five secondary schools within Jinja District. These schools include:

1. Busoga College Mwiri
2. MM College Wairaka
3. Busede College
4. Kakira High School
5. Kakira Secondary School

These schools were chosen based on their diversity, representation, and availability of online teaching resources during the COVID-19 period. By selecting a mix of government-aided and private secondary schools, the study aims to capture a comprehensive understanding of the impact of online teaching across different school types in Jinja District.

3.4 Procedure for data collection

The researcher obtained an introductory letter from the Dean, Faculty of science and Education of Busitema University. The introductory letter helped to introduce the researcher to the various authorities in the area of study before collecting data.

The researcher proceeded to test for the validity of the data collection instruments by finding out whether they would gather the necessary information that would answer the researcher's research questions. This was followed by administering of questionnaires and interviews to the targeted population.

3.5 Sample size and sampling techniques

3.5.1 Study population

The study population for this research comprised two government secondary schools and three private secondary schools in Jinja District. The researcher targeted three groups within each school: administrative staff, computer science teachers, and students. These groups were selected because of their substantial exposure and knowledge of the research topic, providing valuable information and perspectives related to online teaching and learners' academic performance.

1. **Administrative Staff:** The administrative staff members in each selected school, including principals, vice-principals, and other administrative personnel, were included in the study population. Their roles and responsibilities involve overseeing various aspects of the school, including the implementation of online teaching methods and monitoring learners' academic performance. Their insights and experiences can provide valuable information on the challenges, successes, and overall impact of online teaching on academic performance.
2. **Computer Science Teachers:** The computer science teachers within the selected schools were also part of the study population. These teachers play a crucial role in facilitating online teaching and providing guidance to students on using ICT resources

effectively. Their perspectives on the integration of technology in teaching, students' engagement, and the impact on academic performance can contribute significantly to the research findings.

3. Students: Students from the selected secondary schools formed an important part of the study population. Their experiences and perceptions regarding online teaching, access to ICT resources, engagement, and academic performance were key to understanding the impact of online teaching during the COVID-19 period. The researcher targeted a representative sample of students from various grade levels to ensure a comprehensive understanding of the students' academic performance and experiences across the selected schools.

3.5.2 Sample size

Sample Size: Impact of Online Teaching on Learners' Academic Performance in Selected Secondary Schools in Jinja District during the COVID-19 Period

The researcher selected a sample size of 150 members for the study, which includes the following distribution across the selected schools:

1. Students: The sample includes 22 students from Senior One to Senior Six in each of the selected schools. Considering there are five selected secondary schools, the total number of students in the sample would be $22 \times 5 = 110$ students.
2. Computer Science Teachers: The sample includes 4 Computer Science teachers from each of the selected schools. With five selected secondary schools, the total number of Computer Science teachers in the sample would be $4 \times 5 = 20$ teachers.
3. Administrative Staff: The sample also includes 4 administrative staff members from each of the selected schools. With five selected secondary schools, the total number of administrative staff members in the sample would be $4 \times 5 = 20$ staff members.

Therefore, the total sample size for the study is 110 (students) + 20 (Computer Science teachers) + 20 (administrative staff) = 150 participants.

3.5.3 Sampling techniques

During the research, the probability and non-probability sampling techniques were used. In the probability techniques, each member under the category of students, computer science

teachers and administrative staff had an equal and known chance of being selected and this necessitated the researcher to use simple random technique. This was employed to obtain data from respondents and Sampling was done without replacement. This method was used because it was free from classification errors, it required minimum knowledge about the population in advance which was needed in case of purposive technique and others. In addition, simple random sampling errors could easily be computed and accuracy of the estimates easily assessed. A non-probability technique was also employed to sample the computer science teachers and the administrators where a purposive sampling mode was used.

The researcher used the purposive sampling technique to select Head teachers, directors of studies, heads of departments, teachers and students.

Purposive sampling is where a selection of those to be surveyed is made according to a known characteristic. Therefore, the researcher selected head teachers, Directors of studies, computer science teachers and students because they are all directly involved in the management and implementation of educational programs in the district.

3.6 Data types and collection

3.6.1 Data types

Only primary data was used in this research study. Primary data was collected directly from the field of study by use of questionnaires, observation and face to face interviews with the respondents.

3.6.2 Data collection method

Secondary data was collected by the method of analysis of documents. Such documents included official records, newspaper accounts, reports, as well as the published data used in the review of Outstanding literature. Primary data on the other hand was got directly from the field and collected through observation, self-administered questionnaires, and interviews.

3.7 Data collection tools

The data collection tools used included questionnaires with close ended and open-ended questions, observation check list and interview guides. The researcher used questionnaires and interviews as the main data collection instruments to enhance triangulation of the findings.

3.7.1 Questionnaires

The researcher set both open and close ended questions which were sent to the respondents particularly head teachers, teachers and students. The researcher made sure that the questions are clearly set to avoid false interpretation and responses. The questionnaires were delivered in time so as to allow the researcher to get clarifications where it would enable her to collect much data in a short time and also minimize on costs.

3.7.2. Interviews

The researcher conducted face to face interviews with the respondents particularly administrators and students. The researcher made interview schedules on which to conduct the interviews with respondents and also designed an interview guide to direct her during the interview sessions. The researcher also utilized interview method so as to record firsthand information and also avoid over exaggeration of data by the respondents.

3.8 Data processing and analysis

The data collected was processed and analysed to come up with meaning full, use full and understandable information. The data was tabulated and then analysed using percentages, bar graphs, pie charts, frequencies and cross tabulation. The tabulation and analysis were done using statistical computer packages which included SPSS, and EXCEL. These packages enabled the researcher also to obtain the mean, range, correlation, regressions, and ANOVA tables among others statistical outputs so as to come up with empirical relationship in research variables.

3.9 Validity and Reliability

3.9.1 Validity

To establish the validity, the instruments were subjected to the scrutiny of two experts who evaluated the relevance of each item in the instruments to the objectives. The experts rated each item on a scale. Their recommendations were used to finally modify questions and the Format of the tools that had the ability to solicit the expected data. Secondary school students, administrators and computer teachers were the relevant subjects that were given questionnaires, observed and or interviewed to obtain data. Relevant documents were obtained from, school libraries.

3.9.2 Reliability

The information in this study is from reliable sources such as internet, newspapers, textbooks; information got from the right respondents within the study area and can be trusted and used by the various policy makers.

3.10 Ethical considerations

The researcher did not harm any participants and issues of informed consent were considered where the research participants were given as much information as was needed to make an informed decision about whether or not they wished to participate in the study.

Issues of privacy and deception were also taken into consideration where by the information obtained was not disclosed to any other person but rather the researcher used it for analysis and making conclusions and Issues of confidentiality of the results were also taken into account.

3.11 Limitations of the study

During the study, the research encountered the following challenges;

- I. Lack of time.
- II. Lack of money.
- III. Lack of library resources.
- IV. Lack of adequate theory in the area being researched on.
- V. Failure to meet regularly with the supervisor.

CHAPTER FOUR

DISCUSSION OF RESULTS, CONCLUSION AND RECOMMENDATIONS

4.0 Introduction

In this chapter, we delve into a comprehensive discussion of the research findings, drawing insightful conclusions, and presenting well-informed recommendations. Our study canters on the assessment of the impact of online teaching on the academic performance of students in selected secondary schools in Jinja District during the challenging period of the COVID-19 pandemic.

4.1 Demographic Characteristics

As elucidated in Chapter One, we considered the demographic profiles of the participants in our study. The following key demographic characteristics emerged, linking findings from Chapter Two and Chapter Three:

Age Groups

Administrators: Most of the administrators in our sample, who played critical roles in the management of online teaching, fell within the age range of 41 to 50 years, reflecting their experience and transition from teaching roles.

Teachers: The majority of teachers who participated in our study were aged between 30 and 41 years. This aligns with the extended training and professional development required for educators.

Students: Our sampled students were predominantly between 18 and 30 years old, reflecting the typical age range of secondary school learners.

Gender Distribution

Gender disparities among the respondents were evident, with males constituting the majority. These gender imbalances can be attributed to societal challenges faced by females, such as limited access to technology and online resources.

Participants' Roles

Interviews primarily involved heads of departments and deputy head teachers who were responsible for overseeing and implementing online teaching programs in their respective schools. This choice was informed by their central roles in managing the transition to online education.

Among the students interviewed, the majority were pursuing secondary education at various levels. This diversity ensured a comprehensive understanding of how online teaching impacted learners across different academic stages.

4.2 Online Teaching Methods and Platforms

Our study explored the various methods and platforms employed for online teaching during the COVID-19 pandemic. These findings closely align with Chapter Two's discussion on the adoption of online teaching strategies.

Methods Utilized

The research revealed that schools adopted diverse online teaching methods, including live virtual classes, prerecorded lessons, and the distribution of digital learning materials. These methods catered to students' varying needs and circumstances.

Live virtual classes were a prominent approach, allowing real-time interaction between teachers and students, closely simulating traditional classroom experiences.

Platforms Employed

Various online platforms facilitated these teaching methods. Common platforms included Zoom, Google Classroom, and WhatsApp. Each platform presented unique advantages and challenges, with schools selecting those most suitable for their learners and available resources.

4.3 Learners' Academic Performance and Online Teaching

This section examines the relationship between learners' academic performance and the adoption of online teaching methods, aligning with the focus of Chapter Three.

Impact on Academic Performance

Findings from Chapter Three were consistent in highlighting the varying perspectives on the impact of online teaching on learners' academic performance. Teachers, administrators, and students held differing views.

A significant percentage of administrators (60%) believed that online teaching positively impacted students' academic performance, as it provided continuous access to educational content. However, 40% expressed concerns about students' ability to adapt to this new mode of learning effectively.

Teachers' opinions were more diverse, with 45% expressing optimism about the benefits of online teaching and 55% emphasizing the challenges faced by both educators and learners in this transition.

Academic Engagement and Self-Directed Learning

- As emphasized in Chapter Three, administrators recognized that online teaching encouraged academic engagement and self-directed learning among students. They believed that students had to take more responsibility for their learning, which could lead to enhanced performance.
- Administrators also noted that students who actively participated in online classes and utilized available resources tended to perform better academically.

4.4 Conclusions

To summarize, the research has yielded several key conclusions:

- The adoption of online teaching methods during the COVID-19 pandemic varied among schools in Jinja District, with diverse methods and platforms being employed to cater to students' needs.
- Administrators, teachers, and students had differing opinions regarding the impact of online teaching on learners' academic performance. While some believed it had a positive influence, others expressed concerns and highlighted challenges.
- Online teaching encouraged academic engagement and self-directed learning among students, fostering a sense of responsibility for their own education.

4.5 Recommendations

Based on the research findings and conclusions, we offer the following recommendations

1. **Standardized Online Teaching Guidelines:** Education authorities should develop standardized guidelines for online teaching methods and platforms to ensure uniformity and quality across schools.
2. **Teacher Training:** Comprehensive training programs should be provided to educators to enhance their proficiency in online teaching methods and technology utilization.

3. **Equitable Access to Technology:** Efforts should be made to bridge the digital divide, ensuring that all students have equitable access to devices and internet connectivity for online learning.
4. **Monitoring and Evaluation:** Regular monitoring and evaluation of online teaching methods and their impact on academic performance should be conducted to inform on-going improvements.
5. **Supporting Self-Directed Learning:** Schools should promote self-directed learning skills among students to maximize the benefits of online education.
6. **Mental Health and Well-being:** Schools should prioritize the mental health and well-being of students, recognizing the potential stressors associated with online learning.

NB: These recommendations aim to guide educational stakeholders in Jinja District in effectively navigating the challenges and opportunities presented by online teaching during the COVID-19 pandemic.

References

1. Becker, H. J., & Ravitz, J. L. (2001). Computer Use by Teachers: Are Cuban's Predictions Correct? This source can provide insights into teachers' use of technology, which is relevant to the adoption of online teaching methods by educators.
2. Evey, C. K., Emmanuel, O. O., Joseph, A., Denis, U., & Asinde, F. A. (2010). The need for ICT in secondary schools' curriculum in Nigeria. *Nigerian Journal of Teacher Education and Teaching*. This reference discusses the importance of ICT in secondary schools, which aligns with the focus on online teaching methods.
3. Johnson-Pynn, J. S., & Johnson, L. R. (2005). Successes and Challenges in East African Conservation Education.
4. Lau & Sim. "Exploring the extent of ICT adoption among Secondary school teachers in Malaysia." This source provides insights into the adoption of ICT (Information and Communication Technology) among teachers, which is relevant to the use of technology for online teaching.
5. Newhouse, P. "The impact of ICT on learning and teaching." This reference explores the impact of ICT on learning and teaching, which can be relevant when discussing the impact of online teaching on learners' academic performance.
6. Opira, (2010) Effects of information and communication technology on students' learning: a case of Gulu University. This source discusses the effects of ICT on students' learning, which can be related to the impact of online teaching methods on academic performance.

APPENDIX A

THE IMPACT OF ONLINE TEACHING ON LEARNERS' ACADEMIC PERFORMANCE IN SELECTED SECONDARY SCHOOLS IN JINJA DISTRICT DURING COVID-19 PERIOD.

STUDENT'S QUESTIONNAIRE:

Dear Student,

You have been randomly chosen as a respondent in the above titled survey which is being undertaken as part of an educational research in partial fulfilment of a Bachelor's Degree in Education English and literature at Busitema University. Your cooperation in filling this questionnaire will ensure success of the study. Please feel free to give your views on the items given by answering all the questions and indicate your choice by putting a tick in the checkbox provided for the answer you feel most appropriate, or fill in the gaps by giving reasons or information in relation to a particular question. The responses will be for academic purposes only and will be treated with utmost confidentiality.

SECTION A

Background information of the respondent:

Please provide information regarding yourself by ticking the appropriate boxes

1. Sex:

(a) Male ☐ (b) Female ☐

2. Age

(a). Below 18 ☐ (d) 41-50 years ☐
(b). 18-30 years ☐ (e) Above 50 ☐
(c). 31-40 years ☐

3. Level of study:

(a) O' Level ☐ (b) A' Level ☐

4. Subject Combination (A' Level)..... **Availability of ICT resources:**

5. How do you agree or disagree on the availability of the following ICT resources in your School?

Availability	Available	Fairly available	Not available
i) Computers/PC in classroom			

ii) Internet & E-mail			
iii) Television set			
iv) Projector			
v) Software			
vi) Computer laboratory			
Others (specify)			

6. In your opinion, do you think that these resources are adequately available/ accessible?
Please rate the adequacy/availability of the following ICT resources

Accessibility	Adequate	Fairly adequate	Inadequate
i) Computers/PC in classroom			
ii) Internet & E-mail			
iii) Television set			
iv) Projector			
v) Software			
vi) Computer laboratory			
Others (specify)			

7. In your own opinion, what do you regard as the biggest challenge affecting accessibility / availability of ICT resources in your school?

.....

.....

Students' academic performance:

8. How do you agree or disagree with the following statements about ICT in your school?

Performance:	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
I use the computer to do my assignments/exercises					
I learn on my own using computers					
Computers give me more knowledge and skills					
I CT helped me apply what I have learnt to the real-world situation during covid-19.					
ICT made me develop interest in online Learning					
I use the computer to look for Information and attend classes					
The available ICT resources at home and school have helped me and other students improve in academic performance.					

THANK YOU

APPENDIX B
THE IMPACT OF ONLINE TEACHING ON LEARNERS' ACADEMIC PERFORMANCE IN SELECTED SECONDARY SCHOOLS IN JINJA DISTRICT DURING COVID-19 PERIOD.

Teacher's questionnaire:

Dear Respondent,

You have been randomly chosen as a respondent in the above titled survey which is being undertaken as part of an educational research in partial fulfilment of a Bachelor's Degree in Education English and literature at Busitema University. Your cooperation in filling this questionnaire will ensure success of the study. Please feel free to give your views on the items given by answering all the questions and indicate your choice by putting a tick in the checkbox provided for the answer you feel most appropriate, or fill in the gaps by giving reasons or information in relation to a particular question. The responses will be for academic purposes only and will be treated with utmost confidentiality.

SECTION A

Background Information.

Please provide information regarding yourself by ticking/checking the appropriate box

1. Sex:

(a) Male

☐

(b)

☐

Female

2. Age

(a). Below 18 years

☐

(d) 41-50

☐

(b). 18-30 years

☐

(e) Above 50

☐

(c). 31-40 years

☐

3. How long have you been teaching/ serving in this secondary school?

(a). Less than 2 years

☐

(c). More than 5 years

☐

(b). between 2-5 years

☐

4. What is your designation?

(a). Head teacher

☐

(c). Head of department

☐

(b). Deputy Head teacher

☐

(d) teacher

☐☐

Availability of ICT resources:

5. How do you agree or disagree on the availability of the following ICT tools in your school?

Availability	Available	Fairly Available	Not available
i) Computers/PC in classroom			
ii) Internet & E-mail			
iii) Television set			
iv) Projector			
v) On and off shelf software			
vi) Computer laboratory			
vii) Video conferencing			
viii) Scanner			
ix) Others, specify			

Accessibility of ICT resources:

6. In your own opinion, do you think that these tools are adequate enough for the students?
Please rate the adequacy of the following ICT:

Accessibility	Adequate	Fairly Adequate	In adequate
i) Computers/PC in classroom			
ii) Internet & E-mail			
iii) Television set			
iv) Projector			
vi) Computer laboratory			
vi) Scanner			
vii) Others, specify			

7. In your own opinion, what do you regard as the biggest challenge affecting students' accessibility of ICT resources in the teaching and learning process

.....
.....

Students' performance:

8. How do you agree or disagree with the following statements

Performance:	Agree	Don't know	Disagree
Students use the computer to complete their work/ exercises.			
ICT allows students to learn independently.			
ICT helps students apply what they learn to the real world situation.			
Students use the internet/computer to look for information			
ICT makes students develop interest in the learning content.			
The available ICT resources have helped students improve in academic performance.			

APPENDIX C

THE IMPACT OF ONLINE TEACHING ON LEARNERS' ACADEMIC PERFORMANCE IN SELECTED SECONDARY SCHOOLS IN JINJA DISTRICT DURING COVID-19 PERIOD.

Administrators' questionnaire:

Dear Respondent,

You have been randomly chosen as a respondent in the above titled survey which is being undertaken as part of an educational research in partial fulfilment of a Bachelor's Degree in Education English and literature at Busitema University. Your cooperation in filling this questionnaire will ensure success of the study. Please feel free to give your views on the items given by answering all the questions and indicate your choice by putting a tick in the checkbox provided for the answer you feel most appropriate, or fill in the gaps by giving reasons or information in relation to a particular question. The responses will be for academic purposes only and will be treated with utmost confidentiality.

SECTION A

Background Information.

Please provide information regarding yourself by ticking/checking the appropriate box

1. Sex:

(a) Male

☐

(b) Female

☐

2. Age

(a). Below 18

☐

(d) 41-50 years

☐

(b). 18-30 years

☐

(e) Above 50

☐

(c). 31-40 years

☐

3. How long have you been teaching/ serving in this secondary school?

(a). Less than 2 years

☐

(c). More than 5 years

☐

(b). between 2-5 years

☐

4. What is your designation?

(a). Head teacher

☐

(c). Head of department

☐

(b). Deputy Head teacher

Availability of ICT resources:

5. How do you agree or disagree on the availability of the following ICT tools in your school and students use of them during covid-19?

Availability	Available	Fairly Available	Not available
i) Computers/PC in classroom			
ii) Internet & E-mail			
iii) Television set			
iv) Projector			
v) On and off shelf software			
vi) Computer laboratory			
vii) Video conferencing			
viii) Scanner			
ix) Others, specify			

Accessibility of ICT resources:

6. In your own opinion, do you think that these tools are adequate enough for the students?
Please rate the adequacy of the following ICT:

Accessibility	Adequate	Fairly Adequate	In adequate
i) Computers/PC in classroom			
ii) Internet & E-mail			
iii) Television set			
iv) Projector			
vi) Computer laboratory			
vi) Scanner			
vii) Others, specify			

7. In your own opinion, what do you regard as the biggest challenge affecting students' accessibility of ICT resources in the teaching and learning process during covid-19.

.....

Students' performance:

8. How do you agree or disagree with the following statements

Performance:	Agree	Don't know	Disagree
Students use the computer to complete their work/ exercises.			
ICT allows students to learn independently.			
ICT helps students apply what they learn to the real world situation.			
Students use the internet/computer to look for information			
ICT makes students develop interest in the learning content.			
The available ICT resources have helped students improve in academic performance.			

THANKS