

**SCHOOL RESOURCES AND EFFECTIVE IMPLEMENTATION OF E-LEARNING IN
SECONDARY SCHOOLS IN KASESE MUNICIPALITY, UGANDA**

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DECLARATION

I Tobia Karaha Kyomuhendo declare that this research dissertation titled “School Resources and Effective Implementation of E-learning in Secondary Schools in Kasese Municipality, Uganda” is my own work specifically produced in pursuit of the course in Educational Policy, Planning and management of Kyambogo University.

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APPROVAL

This research dissertation titled “School Resources and Effective Implementation of E- Learning in Secondary Schools in Kasese Municipality, Uganda” has been done with our guidance.

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DEDICATION

I dedicate this study to my parents, Mr Ivan and Mrs Angelica Karaha who supported me throughout my education for encouraging me and supporting me to pursue this course. I also dedicate this course to my husband Andrew Musiitwa for being there for me and my children and for enduring my absence as I carried out this study. I pray that this study be an inspiration in your education effort.

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ABSTRACT

This study examined the influence of school resources and effective implementation of e-learning in secondary schools in Kasese Municipality, Uganda. Specifically, this study examined the influence of tangible resources and effective implementation of e-learning, assessed the influence of intangible resources and e-learning, and examined the influence of school capabilities on e-learning in secondary schools in Kasese Municipality, Uganda. Using quantitative research approach, the study adopted a correlational research design on a sample of 183 teachers. Data was collected using a self-administered questionnaire. Data was analysed using quantitative methods. Quantitative data was analysed using descriptive statistics specifically frequencies, percentages and means, and inferential analyses particularly correlation and regression analyses. The findings revealed schools' resources in terms of tangible and intangible resources, and capabilities had a positive and significant influence on e-learning. Therefore, it was concluded that tangible resources are essential for effective implementation of e-learning in secondary schools, intangible resources are vital for effective implementation of e-learning in secondary schools and schools' capabilities are imperative for effective implementation of e-learning in secondary schools. It was thus recommended that, the Ministry of Education, directors of schools and head teachers should ensure that schools have sufficient tangible resources for e-learning in form of ICT facilities, school ICT policies and e-library resources. Directors and head teachers should ensure schools have adequate intangible resources that are technology know how, learning culture and relationship with stakeholders. Directors and head teachers should ensure schools have adequate capabilities which are experimentation, integration capability and teaching content management.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Today there is consensus that e-learning has become a necessary way of delivering education following COVID-19 lockdowns that brought technology platforms into the realm of learning globally (Dignen & Burmeister, 2020). However, there is lack of evidence about the capacity of secondary schools especially in the developing countries to effectively implement e-learning because of low levels of technology adoption (Praba, 2022). Therefore, this study sought to investigate how school resources are linked with effective implementation of e-learning.

1.1 Background

The background section of this dissertation covers the historical, conceptual, theoretical and contextual perspectives.

1.1.1 Historical Perspective. Using e-learning has become a common aspect of delivering education by educational institutions worldwide (Lee et al., 2019). Nevertheless, it should be noted that technology use in delivering education is not a recent phenomenon but has evolved over time. A 1728 advert in the Boston Gazette indicated that people desiring to study shorthand would have lessons sent weekly to them via students exchanging letters all over the country (Nielsen, 2020). Since the 1960s, technologies including televisions, recorders, and audio-visuals have been employed for instruction (Salehi & Salehi, 2012). At the University of Illinois in Urbana in the 1960s, Don Bitzeras pioneered the use of computers as teaching aids (Kule et al.,

2021). Following the emergence of the World Wide Web, a blissful environment of computer guided teaching and learning became part of the education arena (Ghavifekr & Rosdy, 2015).

The information technology environment has made many schools include e-learning into instructional activities besides the traditional teaching system of teacher presence in the classroom (Hošková-Mayerová & Rosická, 2015). Nonetheless, use of e-learning technologies has come with issues in the delivery of school curricula not just in lowly developed nations only, but also in the developed ones. There is a feeling that computers have taken the place of teachers, depriving students of the benefits that computers cannot deliver such as identifying strength and weakness of students, physical support and social interaction (Khlaif, 2018). Nonetheless, due to the COVID-19 epidemic which kept around 1.2 billion learners out of classrooms internationally, e-learning mode of instruction became a reality (Krönke, 2020). E-learning has been pivotal in delivering student-centred learning since the COVID-19 lockdowns (Almaiah et al., 2020).

Unfortunately, while most secondary schools in developed countries during the schools' closure period migrated to e-learning, about 297 million students across the African continent had challenges of accessing learning through e-learning (Kuwonu, 2020). This was because of low electricity supply, absence of internet connectivity in some places, unaffordable internet data, the challenge of the urban-rural digital divide and lack of basic facilities and devices needed to undertake e-learning (World Bank, 2020). Still, the majority of African countries lacked policies to ensure better educational outcomes except South Africa with a clearly stipulated e-education policy. Even so, in South Africa gaps exist in policy comprehension among those involved in delivering education which has consequently effected e-learning implementation (Vandeyar, 2015). In East Africa, Kenya is the only country that has made

concerted effort to promote e-learning by developing e-learning infrastructure in five public secondary schools in every district (Otundo, 2014).

Uganda has experienced growth in its ICT sector over the past decade as the result of the liberalization of the acquisition, use and application of ICT in 1996. A range of technologies adopted include: cellular and mobile telephone networks, mobile radio communication, paging services and courier services (National ICT Policy, 2003). In Uganda, the ICT infrastructure expansion has created different avenues through which ICTs can be applied to the various sectors like health, agriculture and education. The Uganda Government under the Ministry of Education and Sports (MoE&S) approved a policy that integrates ICT into the curriculum for primary and secondary schools.

However, despite the recognition e-learning has received at all education levels there is still very limited adoption and effective utilization. Current e-learning initiatives at the lower education levels, for instance have concentrated on putting into place ICT infrastructure that supports e-learning with very limited emphasis on content development and pedagogical aspects. Notably in partnership with MoE&S is SchoolNet Uganda (2007) which has setup ICT facilities in over 42 secondary school and Uganda Connect- UConnect (2007) who have provided 64 secondary schools and 34 primary schools with computers and internet facilities in the urban areas. It comes as no surprise that the ICT facilities in most cases have been used for administrative computing and computer skills development with no activity related to e-learning.

This has been attributed to the limited infrastructure and resources, students to computer ratio, lack of online pedagogical skills among others. In light of this the study sought to

determine how school resources have impacted the successful implementation of e-learning in schools in Kasese Municipality.

1.1.2 Theoretical perspective. The Resource -Based View Theory (RBVT) was the basis for the investigations of this study. RBVT was proposed by Penrose (1959) and developed by proponents such as Barney (1991) suggesting that the services of an organization are dependent on the collection of productive resources that are indispensable to it (Patnaik et al., 2022). RBVT describes the bundle of resources (tangible and intangible) organisations have and their capabilities (Donnellan & Rutledge, 2019). RBVT suggests that an organisation is a collection of tangible and intangible resources, and capabilities necessary for their success (Kamasak, 2017). The bundle of resources and capabilities are the base of an organisation when pursuing its programmes and projects. Therefore, the resources and capabilities are the source of value to an organisation involved in delivery of services and these resources give the organisations competitive advantage (Amit & Han, 2017).

The core principle of RBVT is focusing on competitive advantage for an organisation with reference to the use of visible and invisible resources owned by the organisation (Alexy et al., 2018). RBVT central concept is that if an organisation is to achieve successful performance it should have the capacity to absorb and utilise its resources (Kraaijenbrink et al., 2009). RBVT conceives that organisations have resources which should be exploited to enhance resources. In schools, such resources include those that can be used for e-learning hence neutralize threats like lack of access to learning as a result of situations like Covid-19 lockdown. Since RBVT addresses the resources and capabilities of the firm (school) as an underlying factor of performance, this theory was deemed suitable to inform this study.

1.1.3 Conceptual Perspective. Effective implementation is the dependent variable and School resources is the independent variable. In this study, e-learning refers specifically to the state-of-the-art web-based system that provides students with individualized, learner-centred, open, engaging, and interactive learning environments (Rodrigues et al., 2019). E-learning is a revolutionary technology changing the educational landscape that involves student-content, student-student and student-teacher e-interaction (Garrison, 2016). Student-student e-interaction is peer contact involving learners through teaching and learning technologies (Moore et al., 2016). Student teacher-interaction is the situation of teacher presence through video conferencing in online learning mode (Zhang et al., 2017). Sun and Wu (2016) pointed out that student-content interaction refers to having content in an automated mode using technologies or traditional mode using paper or attending lessons.

School resources refer human, material, non-material and audio-visual devices in an educational institution (Usman, 2016). RBVT identifies resources in terms of tangibles, intangibles, and capabilities (Kamasak, 2017). Tangible resources are the physical resources that provide sustainable competitive advantage (Holdford, 2018) such as ICT teaching facilities, school ICT policy, library e-resources, computer laboratories, internet and libraries. Intangible resources denote scarce and valuable possessions of an organisation that ensure competitive advantage and bring about sustainability (Bulińska-Stangrecka & Bagieńska, 2020). These include technical know-how, learning culture, organisational structure, and relationship with the stakeholders (Sharma & Dharni, 2020).

School organizational capabilities denote a school's capacity to allocate its resources that are either tangible or intangible to accomplish a task at hand, to improve teaching and learning performance (Alshurideh et al., 2019). Furthermore, Alharthi et al. (2019) defines organizational

capability the ability of an entity to carry out a coordinated set of actions while utilizing organizational resources with the intention of obtaining a specific outcome. Capabilities are the invisible competencies or the expertise required by the organisation in execution of its tasks (Othman et al., 2015). According to Nayeemunnisa and Gomath (2020), capabilities include technical-know how, experimentation, integration capability, and content management

1.1.4 Contextual Background. The context of this study was secondary schools in Kasese Municipality, Kasese District in Uganda. Kasese Municipality has three government aided secondary schools and five private well established secondary schools. In an effort to implement e-learning in schools, the government of Uganda introduced the national ICT policy, built computer laboratories and supplied virtual science content to most government aided schools.

In Uganda, while the government put in place the local Internet Exchange Point for use by removing license fees on Internet Access with the 2.4GHz spectrum growing to about 25mbps for uplink and 10mbps for down link from only about 1 Mbps from 2021-2022 (Uganda Ministry of ICT and National Guidance, 2022), affordability and access to internet continued to be a challenge. Some surveys indicate that Uganda's internet penetration rate stood at 29.1% of the total population at the start of 2020 and the World Bank puts it at 6% for 2022. Disparities remain between rural and urban areas hindering effective implementation of e-learning in rural areas (Nawangwe et al., 2021).

In Uganda, government promised to distribute radios for the poor rural families but these have never been given. Meanwhile their most affluent compatriots were learning throughout the Covid season via zoom on smart phones and laptops. Therefore, e-learning remains a privilege of those in urban areas disadvantaging the folk in rural areas. In light of this, the study sought to

determine how school resources have impacted the successful deployment of e-learning in schools in Uganda looking at schools in Kasese Municipality. Approximately, 930 teachers have been equipped with computer skills to carry out the teaching. In addition, a number of schools have established ICT departments to facilitate e-learning implementation (Lukenge, 2019).

In spite the introduction of ICT in secondary schools, only 135 out of 1062 candidates (12.7%) registered and sat for computer studies in the 2020 UCE in Kasese Municipality. Analysis of the results indicated that 24/135 (17%) passed with D1-C6 while 33 students Passed in P7& P8 while 76 failed (F9) with 2 absentees (UNEB 2020). Teachers largely still use traditional teaching pedagogical strategies involving chalk and talk, dictation of notes and lectures (Lukenge, 2019). The above contextual evidence shows that despite the government effort to promote e-learning through accessing schools necessary e-resources, challenges remain with schools grappling with low uptake of computer studies, inadequate facilities (computers), un-skilled teachers and traditional teaching methods. Therefore, this study seeks to investigate how school resources affected effective implementation of e- learning in the schools.

1.2 Statement of the Problem

E-learning is becoming an increasingly important element in teaching and learning around the world. While e-learning platforms are becoming increasingly available in many education institutions in Uganda, the adoption of the technology is quite different from institution to institution. Thus, several new approaches in e-learning such as massive online open courses (software that primarily focuses on participation patterns and participant experiences), virtual reality (interactive technology), and gamification that influences learner behaviour have been designed to enable learning of students (Panyajamorn et al., 2018). E-learning is highly

indispensable because it can equip learners with vital technological skills in order to be in line with the Sustainable Development Goal four on education (SDGs) (González et al., 2020). Recognising the importance of e-learning, the government of Uganda has made effort to promote e-learning in secondary schools. For instance, there has been inclusion of ICT in the secondary curriculum, and availability of ICT equipment such as computers in some schools in the country. Despite a government policy to integrate ICT in secondary school curriculum and massive investments in ICT equipment support to schools, school's effectiveness in implementing e-learning is still low.

In Kasese Municipality, Kasese secondary school was supplied with four servers each powering 10 monitors with Wi-Fi connected by UCC as well as twenty computers supplied by ADB. Kilembe secondary school received 37 computers of which 27 are functional from UCC. Mt. Rwenzori Girls Secondary School has 11 computers and only 2 are functional (Kasese District Statistical Abstract, 2021). All the above interventions were aimed at promoting effective e-learning implementation. Nonetheless, government efforts in provision of computers, training of teachers, the adoption of e-learning remains at 23.5% far below target of 70% (Kasese District Statistical Abstract, 2021). This means that e-learning implementation remains very low in the district. It is against such a backdrop that this study examined the link between school resources and effective implementation of e-learning in secondary schools Kasese Municipality, Kasese District.

1.3 Purpose of the study

The purpose of the study was to investigate the relationship between availability of school resources and e-learning implementation in secondary schools in Kasese Municipality, Kasese District.

1.4 Specific Objectives

The specific objectives of the study were;

- i. To examine the influence of schools' tangible resources and e- learning in secondary schools in Kasese Municipality.
- ii. To assess the influence of schools' intangible resources on e-learning implementation in Kasese Municipality.
- iii. To examine the influence of school capabilities on e-learning implementation in secondary schools in Kasese Municipality.

1.5 Research Hypotheses

The study tested the following research hypotheses;

- i. Schools' tangible resources have a positive significant influence on e- learning implementation in secondary schools.
- ii. Schools' intangible resources have a positive significant influence on e-learning implementation in secondary schools.
- iii. School capabilities have a positive significant influence on e-learning implementation in secondary schools

1.6 Significance of the study

The findings of this study might contribute to policy formulation and school administration in secondary schools and the body of knowledge as follows:

The study might be beneficial to policy makers including the Executive and Parliament by providing important information necessary for developing policies for implementing e-learning. This might help in improving on the quality of e-learning.

The study might be beneficial to Ministry of Education and its partners by guiding them on how implementation of e-learning should go on and thus be in position to adjust appropriately. This is because the study will explore the level of schools' preparedness using e-learning hence providing essential information.

The study might help the head teachers on how to effectively implement e-learning in schools. These findings could be the basis for organizing trainings for teachers on how to implement e-learning. This may help in promoting improved performance.

The study might be beneficial to the teachers, through revealing how to use available school resources and how they promote e-learning. This might help in enhancing effective online teaching delivery.

To the body of knowledge, the findings of the study will benefit future scholars studying related contents about e-learning. This is because the study will add to extant knowledge. The study will provide researchers more information on school resources and effective e-learning implementation in secondary schools. In addition, the limitations of this study will guide future research.

1.7 Scope of the study

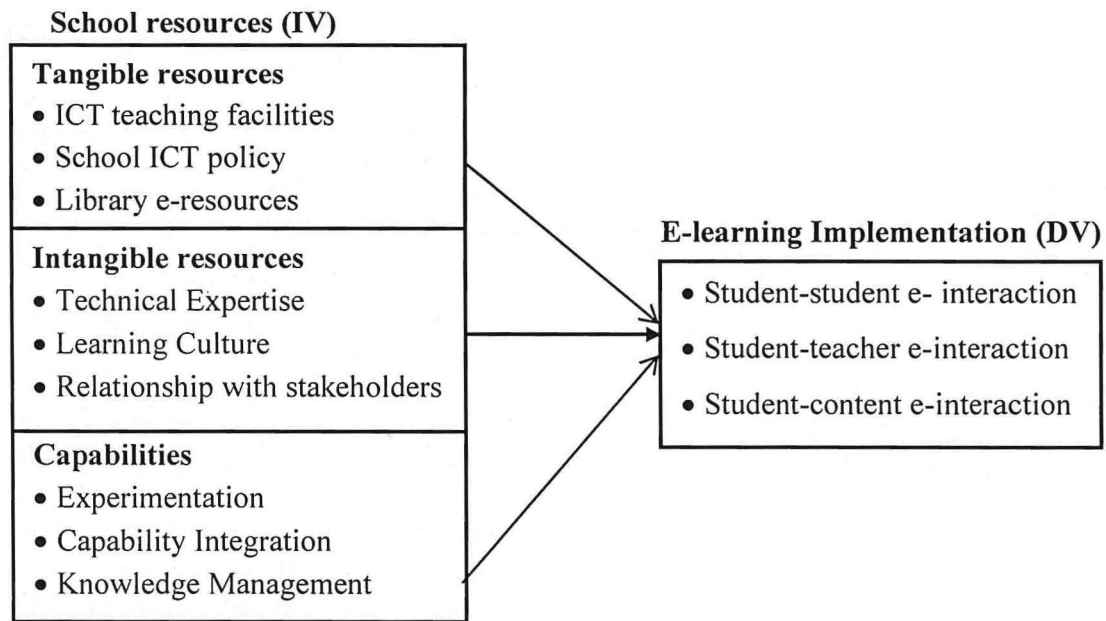
1.7.1 Geographical Scope. The study was conducted in Kasese Municipality-Kasese District of Western Uganda. The area is located in a distance of 366 km by road from Uganda's capital Kampala. Kasese Municipality has three divisions, Bulembia, Nyamwamba and Central. The

area has been chosen because, statistics from the Ministry of Education and Sports show that it is the least performing in e-learning in western Uganda (Ministry of Education and Sports, (MOES) 2019).

1.7.2 Content Scope. This study examined effective implementation of e-learning based on availability of school resources. Effective implementation of e-learning was studied in terms of student-content, student –teacher and student – content e-interaction. School resources were studied in terms of tangible resources, intangible and organizational capabilities. Tangible resources were conceptualised in terms of ICT teaching facilities, school ICT policy and Library e-resources. Intangible resources in this study were in context of technical know-how, learning culture, organisational structure, and relationship with the stakeholders. School organizational capabilities involved experimentation, content management and integration.

1.7.3 Time Scope. This cross-sectional study was carried out between March 2022 - April 2023. This time period was considered because schools were expected to effectively implement e-learning. This measure was necessary to overcome the negative impact of Covid-19 on education in Uganda.

1.8 Conceptual Framework



Source: Conceptual framework developed from ideas adapted from Akbulut et al. (2007), Downer et al. (2015); Leufvén et al. (2015), Malinovski et al. (2012), Schreurs (2007) Ngololo et al. (2012), and Yılmaz and Karataş (2018).

Figure 1.1:

Conceptual framework showing the relationship between the study concepts

The conceptual framework (Figure 1.1) shows that the relationship between effective implementation of e-learning and school resources. Effective implementation of e-learning was conceptualised as student-student, student- teacher and student- content e-interaction in on line learning. School resources include tangible resources, intangible resources and organizational capabilities while the Tangible resources include ICT teaching facilities, school ICT and library e-resources. Intangible resources are technical knowhow, organization structure, learning culture and relationship with stakeholders whereas the capabilities are experimentation, content management and capability integration.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review is on school resources and implementation of e-learning. The review includes the theory and analysis of earlier empirical literature on tangible resources, intangible resources and capabilities in relation to e-learning.

2.1 Theoretical Review

Resource Based View Theory (RBVT) traced from Penrose (1959) and developed by proponents such as Barney (1991) was the basis for the investigations of this study. RBVT posits that the basic propeller of an organisation's infinite competitive advantage and productivity is the bundle of its' inimitable and non-substitutable resources (Penrose, 1959). The central proposition of RBVT is that if an entity is to achieve successful performance, it must have the capacity to absorb and utilise its resources (Kraaijenbrink et al., 2010). Utilising the resources provides the opportunity to neutralize challenges in the production environment. RBVT suggests that organisations are a collection of tangible and intangible resources, and capabilities necessary for their success (Kamasak, 2017). The bundle of resources and capabilities are the base of organisations when pursuing their programmes and projects. Therefore, the resources and capabilities are the source of value to organisation involved in delivery of certain services and these resources give the organisations competitive advantage (Amit & Han, 2017).

RBVT is not a determinant of the universal link between performance of production entities and their resources but the value of a resource depends on its utilisation, including allocation of its related assets. This implies that even at the school level, discernible association

might not exist between performance and having resources. RBVT had been criticized for being less progressive and not addressing the effect of organizational activities on resource effectiveness over time (Kozlenkova et al., 2014). Thus, the use of RBVT in different arenas apart from its acceptance amongst strategic management literature that underscores its resource-base, it has supplied the footing for the RBT framework or an extension (Barney et al., 2021). Since RBVT suggests that resources and capabilities of organizations such as secondary schools are an underlying factor for performance, it is imperative to examine how schools' resources affect e-learning implementation. The researcher used the RBVT to determine the strategic resources that schools can exploit to achieve sustainable implementation of e-learning.

2.2 Review of Related Literature

2.2.1 Schools' Tangible Resources and E-learning Implementation. Tangible resources are the material or substantial materials of the organisation (Orth et al., 2015). Tangible resources are utilised to provide services (Jawed & Siddiqui, 2019). Studies on tangible resources and e-learning implementation exist. For instance, Almaiah and Al-Khasawneh (2020) looked at the key factors influencing the adoption of mobile cloud computing on university campuses and discovered that many students in developing nations find it problematic in uptake e-learning. Due to the fact that industrialized nations have already made considerable advancements, it is possible that implementing e-learning will be less difficult there because of the students' desire to adopt and use the technology. Utilizing this system at this time may be more useful. For instance, using an e-learning system, students may be messaging or participating in a learning activity with teachers from home using a laptop or mobile device.

In a Nigerian university, Atsumbe et al. (2012) looked into the use and accessibility of e-learning infrastructures. Their research showed that there were not enough facilities devoted to teaching and learning. Although lecturers and students had access to computers or laptops with internet capabilities, the available e-learning infrastructure was primarily intended for administrative usage. Hence Schools' tangible resources were not related to e-learning implementation. Relatedly, Chong et al. (2016) studied the effect of access to computer and internet facilities on e-learning of Malaysian nurses. The findings indicated that while the nurses had high access to tangible e-learning resources, average hours of computer use weekly were low. Therefore, while ICT facilities were associated with effective e-learning implementation, they do not increase e-learning hence its successful implementation is still low.

Anene et al. (2014) studied the issues and future of e-learning in Nigerian universities by focusing on the accessibility of e-learning facilities, the availability of e-learning resources, and the question of whether students used e-learning in their studies. In their study, they used the University of Abuja in Nigeria as their case study. The study found that infrastructure shortcomings were one of the barriers to ICT use. The students bemoaned the lack of adequate e-learning library domains, online seminars or discussions with teachers, online exams, and the constrained bandwidth in Nigerian universities. In their study, Chiaha et al. (2013) examined the types of e-learning resources that students had access to, the proportion of students who used these resources, the amount to which they were used, as well as the barriers that prevented students from using these resources. The results showed that 42.9% of the students had access to e-learning resources; the majority of students merely had e-mail accounts, and obstacles to accessing e-learning resources include erratic electricity supply, a weak network connection, and a lack of skills. The results revealed that introduction of e-learning inside the school was delayed

despite the presence of e-learning facilities by an unstable power supply, a weak power network, and a lack of adequate skills. This means availability of resources is linked to e-learning implementation.

In a related study, Ismail et al. (2020) examined the effects of concrete resources, such as Moodle e-learning, in a classroom setting and found that using Moodle e-learning improved students' learning in a statistically significant way. In their study, Alhabeeb and Rowley (2017) looked at crucial success factors for e-learning in Saudi Arabian universities. According to the study, e-learning required technological infrastructure, student computer proficiency, and teacher's acquaintance with learning resources. Consistent with the studies above, Zhang et al. (2015) in their study involving a Chinese high- tech industry revealed that tangible resources were strategic resources that enabled competitive actions and performance. Therefore, for secondary schools implementing e- learning, tangible resources are essential.

In a study related to the above, Eze et al. (2018) used teachers of M-University in Nigeria. The study found that physical e-learning facilities were acceptable and available and most teachers felt comfortable utilizing them while teaching. Nevertheless, there was minimal utilisation of the resources hindering successful adoption. As with the earlier study, this finding suggested that access to ICT facilities did not increase e-learning. In agreement with the studies above, Jawed and Siddiqui (2019) in a study examining the importance of tangible resources to performance of organisations established that tangible resources had a detrimental and minimal impact on organizations' performance. Similarly, in a related study Masood et al. (2019) reported that tangible resources had no impact on organisational performance. Consistent with the studies above, Rajchelt-Zublewicz et al. (2019) reported existence of a weak correlation between tangible resources with organisational performance. This meant that existence of tangible

resources such as ICT facilities might not have an impact on e-learning implementation. On the contrary, Okoth and Machuki (2018) in a study in Kenya established that critical strategic tangible resources explained performance differentials. This meant that if a university has high level ICT facilities e-learning implementation will be superior,

In their study, Ibieta et al. (2017) examined the activities and variables connected with teacher usage of ICT within and outside classrooms in Chile to establish the role of the internet in teachers' professional practice. Their findings showed that teachers used ICT more often for class preparation which enhanced how well they delivered content in the classrooms. Therefore, library e-resources are necessary for classroom preparation for improved content delivery. In relation to the above, Mugizi and Amwine (2020) assessed the usage of information and communication technology (ICT) by teachers at a private international school in Kampala, Uganda in relation to their job performance. Their findings showed that electronic library resources had a good and significant impact on teachers' job performance. Thus, access of library resources enhances implementation of e-learning. In a methodical review, Nwigbo and Madhu (2016) indicated that having access to high-quality resources allowed teachers to conduct effective teaching by allowing them to access data files during class planning and research. This suggested that who teachers have access to a variety of information sources through e-resources are able to conduct successful instruction.

Generally, the studies above indicate that several scholars have expended effort to study the importance of tangible resources although the studies raise empirical gaps. For instance, although lecturers and students had access to learning equipment with internet capabilities, Atsumbe et al. (2012) found that they were not used for teaching and learning. This was in direct opposition to every other scholar who suggested that the implementation of e-learning was

significantly influenced by tangible resources. The lack of agreement regarding the significance of material resources in the successful implementation of e-learning, therefore, necessitates further empirical research.

2.2.2 Schools' intangible resources and E-learning implementation. Intangible resources are the priceless assets of an organization that create competitive advantage and allow the business to be long-lasting and sustainable (Bulińska-Stangrecka & Bagieńska, 2020). Intangible assets play a vital role in the internalization of the business and are difficult to imitate, which helps to maintain the organization's competitive edge. Intangible assets are crucial investments that will retain the organization's presence in the upcoming years because they reduce costs and boost performance. Investments in intangibles are strategic bets for the long-term expansion of a business (Ocak & Findik, 2019). Such resources include; technical know-how, human resource, organizational structure, learning culture and relationship with the stakeholders (Sharma & Dharni, 2020).

In their study, Adiyarta et al. (2018) performed an empirical analysis to assess the institution's readiness for implementing e-learning. The results showed existence of a connection between factors affecting human resources, technological proficiency, and content and the adoption of e-learning in institutions. This shows that the application of e-learning is related to the intangible component of technology knowledge. In their study, Ghavifekr and Rosdy (2015) analysed teachers' perceptions on effectiveness of ICT integration to support teaching and learning process in classroom. The findings established that teacher ICT skills were one of the main factors for success of technology-based teaching and learning. This suggested that teacher's ICT know-how facilitates implementation of e-learning. Relatedly, Hatlevik and Hatlevik (2018)

examined the antecedents of teachers' self-efficacy in understanding learning and achieving computer related skill using teachers in Norwegian schools. The findings revealed a link between teachers' use of ICT in their instruction and interdepartmental cooperation. Therefore, the learning culture of teachers involving collegial collaboration related to ICT implementation.

Unal (2020) in a study examining teacher candidates' use of technologies at a public university in Turkey established that collaborative learning culture was positively associated with the intention to use e-learning technologies for teaching. This suggests that the presence of an intangible learning culture of collaboration facilitates the deployment of e-learning. In a study investigating the relative contribution of intangible resources on performance of institutions, Kamasak (2017) investigated staff of Turkish firms. The findings demonstrated that intangible resources had a higher effect on performance when compared to other resources. This means that intangible resources enhanced performance of organisations such as implementation of e-learning compared. Further, Kasse and Balunywa (2013) evaluated the utilization of e-learning in Uganda's higher education institutions. Their research showed that these institutions had major issues with technology, architecture, and mentality that prevented them from widely deploying e-learning.

In a study on e-learning, Makokha and Mutisya (2016) explored the issues preventing the use of e-learning in Kenyan higher education institutions. Their study found that the use of computers and other technology by teachers to educate their pupils' information and skills was essential for e-learning. Therefore, technical know-how which is an element of intangible resource enhances implementation of e-learning.

In a study involving Indonesian mathematics secondary teachers, Mailizar and Fan (2020) studied the use of ICT in secondary mathematics classrooms. The study indicated that to a

large extent teacher had inadequate knowledge of ICT and ICT use in teaching which impeded use of ICT in teaching. This meant that inadequate technology know-how hindered implementation of e-learning. In a study seeking to determine the factors affecting the acceptance and use of electronic learning among Ugandan University students, Twinamasiko et al. (2021) revealed that skills were one of the main barriers to the implementation of e-learning. Thus, poor ICT skills impeded implementation of e-learning. In a study done in Ethiopia assessing knowledge and utilisation of information communication technology (ICT), Woreta et al. (2013) used medicine and health science students of the University of Gondar. The results indicated that ICT knowledge had a strong and positive association with ICT utilisation. This indicates that technology know-how is imperative for implementation e-learning.

While the studies above show that intangible resources relate to implementation of e-learning, empirical gaps emerge. For example, whereas all other studies supported the existence of a relationship, Jawed and Siddiqui (2019) reported that intangible resources had a negative and insignificant role on the performance of organisations as implementation of e-learning. This suggested that depending on the context, the relationship might not be definite. This empirical gap made it imperative for this study to further test the relationship between intangible resources and implementation of e-learning.

2.2.3 School capabilities and e-learning implementation. Capabilities describe the organization's ability to allocate resources using organizational processes (Huang & Li, 2017). Capabilities are central in explaining how organizations manage the development of innovations and integrate acquisitions such as e-learning (Costello & McNaughton, 2018). Capabilities can be thought of as being in the knowledge, skills, and expertise of particular persons or groups of

people working as human actors inside the organization since they are the outcome of the interaction of human and material resources (Sims et al., 2013). Therefore, capabilities are essential for implementation of innovations such as e-learning. School capabilities mainly include experimentation, content management, capability integration, organizational culture, leadership performance (Costello & McNaughton, 2018).

In their study, Al-Ammary et al. (2016) assessed the e-learning maturity level of both public and private universities in the Kingdom of Bahrain. The study suggested that e-learning capability maturity level was related to effective implementation of e-learning. This meant that for effective implementation of programmes such as e-learning, universities need to enhance ICT competences. Using a Finnish Higher Education Institution, Haukijärvi (2015) investigated strategies for digitalisation of learning and teaching basing on the resource-based with experts that were top management representatives, experts in pedagogical development, quality control, e-learning technology development, e-learning pedagogy, and experts in e-learning support. According to the study, the digitalization of learning and teaching was directly related to crucial resources and capacities.

In a study involving both students and faculty staff from a university in Poland, Kołodziejczak and Roszak (2017) sought to make recommendations about how to get students ready for online learning. The study found a substantial correlation between ICT competences and the successful deployment of e-learning for distance education. This research suggests that teachers' competencies should be propagated to apply e-learning in secondary schools. In Indonesia, Martha et al. (2021) evaluated the e-learning proficiency of undergraduate students. The findings indicated that students from universities with a high level of competences of capabilities were more disciplined and had better schedules enhancing implementation of e-

learning. In a review, Khmour et al. (2014) looked into how content management and e-learning integration enhanced knowledge capture and sharing in organizations. The review demonstrated that content management supported e-learning in organizations. Therefore, institutions must acquire content management skills that can improve e-learning.

In their study, Kusdibyo et al. (2019) using Indonesian students and lecturers explored how users' attitudes regarding using electronic learning were affected by innovation adoption components. ICT trialability (experimentation) was found to have a positive effect on the attitude towards e-learning. Lang et al. (2017) in their effort to develop a pedagogical model for outreach activities in ICT used school and pre-service teachers in Australia. Their model demonstrated how experimenting with teachers learning from one other in the same way and students learning from each other while using creativity and experimentation in student-led classroom environments improves the implementation of e-learning. Examining integration of dynamic capabilities into e-learning, Costello and McNaughton (2018) used organisations in New Zealand. The findings indicated that integrating dynamic capabilities led to content alignment and integration enhancing implementation of e-learning. This suggests that to effectively implement e-learning, essential content should be integrated in the system.

On the other hand, Lang et al. (2017) in their effort to develop a pedagogical model for outreach activities in ICT used school and pre-service teachers in Australia. Their model revealed that experimenting with teachers learning from each other in the same manner students learn from each other using creativity and experimentation in student-led classroom environments enhances implementation of e-learning. In a study carried out in Spain, Vidal and Gómez (2015) investigated whether interaction between students, students and teachers, and students and ICT were improved by ICT. According to the study, team teaching seminars using

ICT increased student enthusiasm by fostering interaction between students, students and teachers, and among students.

In their study, Chaw and Tang (2018) studied how Malaysian university students' learning effectiveness was affected by the quality of the learning management system, the informational content, and the services they received. The study found a substantial correlation between learning effectiveness and learning content management. This suggests that good e-learning adoption is a result of learning content management. Mtebe and Raphael (2018) conducted a related study at the University of Dar es Salaam in Tanzania with the aim of identifying the critical variables that affected students' satisfaction with the e-learning system. The findings revealed that learners' satisfaction with the e-learning system was not significantly impacted by the course quality. Thus, the finding of this study was contrary to the findings of other scholars who indicated that learners' content management aspects related e-learning effectiveness. However, literature search suggested that limited studies have been carried out on capabilities and implementation of e-learning with no study obtained on the same in the context of Uganda where schools are struggling to implement e-learning. This thus called for the investigations of this study in the context of secondary schools in Uganda.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter contains procedures for determining data collection and analysis data. The data was the basis for presenting the study findings. This section presents research design, study population, sample size, sampling technique and procedure, measurement of variables, data collection instruments, data quality control, data analysis and research ethical considerations.

3.1 Research Design

The research design for the study was correlational. The correlational research design is a method for figuring out whether two variables are connected to one another or to other factors (Fisher & Bloomfield, 2019). With this design, the connection between determinant and criterion variables is shown. The correlational research design was utilized to determine whether there was a connection between school resources and effective e-learning implementation. Since data was gathered, a quantitative method was applied in the study. Using the quantitative approach, the study was able to draw statistical inferences.

3.2 Study Population

Teachers numbering 236 from 3 Universal Secondary Education (USE) schools and teachers from 5 private secondary schools was the target population. These categories were selected because they are involved in teaching (Ministry of Education and sports Report, 2022).

3.3 Determination of the Sample Size

A sample of 183 respondents was chosen using Krejcie and Morgan's (1970) table. The table is for determining the required minimum sample sizes for a population. It is noted that 97 government aided school teachers, 86 private school teachers was selected using simple random sampling.

Table 3.1:

Sample Size of Respondents and Sampling Technique

Category	Sample Population	Sample Size	Sampling Technique
Government aided Schools Teachers	130	97	Simple-random sampling
Private Schools Teachers	106	86	Simple-random sampling
Total	236	183	

3.4 Sampling Techniques and Procedures

Simple random sampling is a sampling technique by which every individual in the population has an equal opportunity of being selected to participate in the study (Fisher & Bloomfield, 2019). This technique is used when the list of whole population is accessible to the researcher in a sampling frame from which the sample size is selected. The selected sample was obtained from the staff list accessed from the head teachers of the respective schools. The sample was generated randomly using the sampling frame provided by excel worksheet. The computer was instructed to generate a sampling worksheet through the sampling dialogue box. The sampling method helped in collecting generalizable results from teachers that provided responses.

3.5 Measurement of Variables and Data Collection Instruments

As shown in Table 3.2, the researcher collected data using a Self-Administered Questionnaire (SAQ) basing on indicators in existing instruments modified for this study. The variables are likely to be appropriate because their validity and reliability are already guaranteed.

Table 3.2:

Measures of the Variables, their Sources and Reliabilities

Variable	Variable	Indicators	Source & Reliabilities
E-learning Implementation	Dependent	- Student-student e-interaction - Student-teacher e-interaction - Student-content e-interaction	Downer et al. (2015) $\alpha = 0.864$; Malinovski et al. (2012) $\alpha = 0.910$; and Yilmaz & Karataş (2018) $\alpha = .95$
Tangible resources	Independent variable 1	- ICT teaching facilities - School ICT policy - Library e-resources	Akbulut et al. (2007); $\alpha = 0.824$ Akbulut et al. (2007) $\alpha = 0.689$ Anyim (2018) $\alpha = \text{Not done}$
Intangible resources	Independent variable 2	- Technical know how - Learning Culture - Relationship with stakeholders	Bhat & Bashir (2018) $\alpha = 0.750- 0.805$ Leufvén et al. (2015) $\alpha > 0.70$ Plaza-Úbeda et al. (2010) $\alpha = 0.92; 0.91$
Capabilities	Independent variable 3	- Experimentation - Content management - Capability integration	Moore & Benbasat (1991); Usluel et al. (2008) $\alpha = 0.75$ Wang & Ahmed (2004) $\alpha = 0.92$. Jamieson-Proctor et al. (2007) $\alpha = 0.94$

3.6 Data Collection Instruments

Data were collected using a self-administered questionnaire (Appendix A). The questionnaire covered introduction, bio data of respondents, schools' tangible resources, schools' intangible resources, school capabilities and e-learning implementation. The questionnaire was based on a five-point Likert scale where, 1 = Strongly Disagree, 2 = Disagree, 3 = Not sure, 4 = Agree and 5 = Strongly Agree.

3.7 Data Quality Control

Data quality was attained through validity and reliability tests. These ensured that accurate and consistent data were collected from the study participants.

3.7.1 Validity. The study established content validity of the study tool making sure that the indicator variables (independent and dependent variables) in it conformed to the conceptual framework (Figure 1.1). Validity tests included calculating Heterotrait-Monotrait (HTMT) Discriminant validity, average variance extracted (AVE) and Factor Analysis using Structural Modelling. Discriminant validity is the degree to which a construct varies from others. Thus, assessment of discriminant validity is essential in any study using latent variables and several items and indicators to describe the constructs (Ab Hamid et al., 2017). Discriminant validity was ascertained in this work to guarantee that the latent constructs used to measure the casual links between the investigated variables were actually unique from one another and not measuring the same thing leading multicollinearity. Further, Heterotrait-Monotrait (HTMT) ratio of correlations were determined in order to examine the discriminant validity of constructs

measured reflectively in relation to other construct measures in the same model. This helped to establish whether the indicators of a construct actually caused the construct.

Table 3.3:

Heterotrait-monotrait ratio (HTMT) Discriminant Validity Matrix

Measures	EI	ESC	ESS	EST
EI				
ESC	0.871			
ESS	0.827	0.503		
EST	0.871	0.615	0.693	
Measures	TR	LE	SIP	ITF
TR				
LE	0.591			
School ICT Policies	0.665	0.666		
ITF	0.882	0.899	0.900	
Measures	IR	LC	RS	TK
IR				
LC	0.877			
RS	0.894	0.672		
TK	0.760	0.462	0.505	
Measures	CAP	EX	IC	KM
CAP				
EX	0.890			
IC	0.876	0.756		
KM	0.881	0.680	0.735	

Key: CAP = Capabilities, ESS = E-learning student-student, EI= E-learning Implementation, EST = E-learning student- Teacher, E-student, ESC- E-student content interaction, EX= experimentation, IC = Integration Capability, ITF= ICT teaching facilities, IR = Intangible resources, KM = Knowledge Management, LC = Learning culture, LE= Library E-Resources, RS = relationship with stakeholders, SIP, School ICT Policies, TK = Technical know-how, TR= Tangible resources.

The test results in Table 3.3 show that the Heterotrait–Monotrait ratio of correlations (HTMT) condition was fulfilled because they did not exceed 0.90 (Henseler et al., 2015). Therefore, the measures were discriminately valid. Further, convergent validity which determined the level of correlation among multiple indicators of the same construct was established using Average Variance Extracted (AVE). Convergent validity reveals convergence in the indicators of the constructs. In this study, convergent validity was confirmed by AVE values because they were higher than the acceptable cut-off of 0.5 (Alarcón et al., 2015).

3.7.2 Reliability. Reliability describes the degree to which the measures of a construct are consistent and dependable, that is, how consistently and dependably do measures measure what they are supposed to be measuring. Ahmed and Ishtiaq (2021) indicate that it is the consistency of a method in measuring something. Thus, measurement is considered reliable if the same results can be obtained consistently by applying the same methodology under similar conditions. In this study, Composite Reliability (CR) and Cronbach Alpha (α) were preferred to determine the internal consistency of the measurement tool.

Composite reliability (construct reliability) refers to a measure of internal consistency in scale items. Thus, reliability of a construct should be at least 0.70 (Dash & Paul, 2021). On the other hand, Cronbach Alpha refers to the inter-relatedness of the indicators of a construct (Taber, 2018). In testing reliability, the composite Reliability (CR) was preferred because of Cronbach Alpha's limitation of assuming that all indicator traits are the same in the population lowering reliability values (Hair Jr. et al., 2020). However, Composite Reliability accommodates outer traits in the indicators enhancing reliability (Dash & Paul, 2021).

Table 3.4:*Construct Reliability and Validity Matrix*

Measures	A	CR	AVE	VIF
E-student-content interaction	0.887	0.912	0.597	1.595
E-student-student interaction	0.837	0.885	0.608	1.800
E-student-teacher interaction	0.860	0.905	0.706	1.463
ICT Teaching Facilities	0.870	0.920	0.793	1.650
Library E-resources	0.815	0.878	0.645	1.579
School ICT Policies	0.876	0.911	0.673	1.783
ICT Teaching Facilities	0.870	0.920	0.793	1.650
Learning Culture	0.815	0.878	0.645	1.579
School ICT Policies	0.876	0.911	0.673	1.783
Learning Culture	0.847	0.908	0.766	1.570
Relationship with Stakeholders	0.871	0.939	0.886	1.640
Technical know-how	0.847	0.891	0.620	1.297
Experimentation	0.876	0.915	0.729	1.882
Integration Capability	0.834	0.900	0.750	1.981
Knowledge Management	0.793	0.879	0.708	1.711

The results in Table 3.4 show Cronbach's Alpha and Composite Reliability for the study constructs. The results show that the values for composite reliability that was used to test the reliability of all the constructs were all above 0.7 indicating satisfactory level of reliability for the items measuring the constructs. This is because according to Lai (2021), the minimum level of composite reliability is 0.70.

3.8 Data Analysis

Quantitative data analysis involved descriptive and inferential analyses. Through the use of SPSS, descriptive analysis included calculating frequencies, percentages, skewness and means. For inferential data analysis, smart PLS was utilized. In order to explain the relationship between the variables and indicators, SmartPLS provides a path model (Sander & Lee, 2014). Using structural equation modelling (SEM), the study tested relationships between the study variables.

3.9 Research Ethical Consideration

The researcher followed appropriate ethical standards for conducting the study, including free and informed consent, non-coercive disclaimers, respect for anonymity, confidentiality, privacy, and honesty. To ensure free and informed consent, the researcher informed the study participants of the study's relevance so that they would voluntarily and voluntarily participate in the it. For non-coercive disclaimer, the researcher explained to the study participants that no penalties were to be extended to those who refused to participate in the study.

To ensure respect for anonymity, the researcher ensured that subject's identity was not linked with personal responses and this was done by not allowing the participants to write their names or personal information on the questionnaire. To keep confidentiality, the researcher explained to the study participants that had the freedom to give or withhold private information as much as they wished during the study.

Further, the researcher acknowledged the source of information used in the study. The study findings were reported as honestly as possible. To ensure voluntary participation in the study, the researcher clearly explained to the participants the relevance of the study. Further, this helped the study participants to understand the benefit of taking part in this study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the findings of a study on school resources and effective implementation of e-learning in secondary schools in Kasese Municipality, Uganda. It also analyses and interprets those findings. Structural equation modelling and descriptive statistics are included in the findings. This section presents information on response rate, background characteristics, descriptive results, histogram and structural model.

4.1 Response Rate

The initial sample determined to provide data for this study were 183 teachers of 3 USE and 5 well established secondary schools in Kasese Municipality using questionnaire survey. Those who provided the data were 171. One item was removed after testing for outliers namely (14). Thus, a total of 170 individual items were considered for analysis which constituted 92.8% of the total number of respondents which was a sufficient percentage rate as recommended by Pielsticker and Hiebl (2020) contend that a response rate of at least 50% is good in social science studies.

4.2 Background Characteristics

This section present information on background characteristics of respondents in the schools and this included; sex, age group, period, highest level of education attained, and position of respondent.

Table 4.1:*Respondents' Background Characteristics*

Item	Categories	Frequency	Percentage
Sex of Respondents	Male	122	71.8
	Female	48	28.2
	Total	170	100.0
Age group	Up to 30 years	56	33.9
	Below 40 years	56	32.9
	40 years and above	58	34.1
	Total	170	100.0
Highest level of Education	Diploma	20	11.8
	Bachelors	129	75.8
	Post Graduate Diploma	8	4.7
	Master's Degree	11	6.5
	Others specify	2	1.2
	Total	170	100.0
Position in your current school	Teacher only	70	41.2
	Class teacher	35	20.6
	Head of department	59	34.7
	Club patron	6	3.5
	Total	170	100.0

The results on the sex of the respondents' in Table 4.1 show that the larger percentage (71.8%) of the respondents was males while the females were 28.2%. Thus, the findings imply that a higher proportion of male teachers' members participated in this study. Nevertheless, both male and female teachers participated in study. The results on age groups show that a larger percentage (34.1%) of the respondents who participated in the study were 40 years and above,

32.9% were below 40 years, and 32.9 were up to 30 years. The results on the highest level of education attained show that 75.8% of teachers who participated in the study had bachelors' degree, 11.8% had diplomas, 6.5 % had masters' degree (4.7%), were postgraduates and others had 1.2%. The results are generalizable on teachers with different academic qualifications. The results on the positions of the teachers showed that the larger percentage (41.2%) of the respondents were teachers only, followed by 34.7% head of departments, 20.6% were class teachers and 3.5% were club patrons. The results suggest that teachers who participated in the study held various positions of responsibility.

4.3 Descriptive Results for Effective Implementation of E-Learning

Effective implementation of e-learning which is the dependent variable was studied as the three-dimensional concept in terms of student-student e-interaction, student –teacher e-interaction and student- content e-interaction. The results on the three concepts of effective implementation of e-learning follow:

4.3.1 Student-Student E- Interaction. The concept of student- student e- interaction was studied using five items. Table 4.2 contains descriptive results for the concept.

Table 4.2:*Descriptive Results for student Student-Student E-interaction*

Student-Student interaction	E-	SD	D	NS	A	SA	Means
Students are able to learn from reading other students' comments posted online platforms		16 (9.4%)	36 (21.2%)	36 (21.2%)	61 (35.9%)	21 (12.4%)	3.20
Comments and questions from other students help students to learn easily		13 (7.6%)	31 (18.2%)	21 (12.4%)	82 (48.2%)	23 (13.5%)	3.41
Students have developed Effective electronic communication skills through on line interaction		12 (7.1%)	39 (22.9%)	25 (14.7%)	67 (39.4%)	27 (15.9%)	3.34
Interacting with online increases students learning motivation		25 (14.7%)	21 (12.4%)	23 (13.5%)	83 (50.6%)	18 (35.9%)	3.28
Should enjoy working in collaboration in online activities		14 (8.2%)	45 (26.5%)	38 (22.4%)	57 (33.5%)	16 (9.4%)	3.09

Key: (SD) = Strongly Disagree, (D) = Disagree, (NS) = Not Sure, (A) = Agree, and (SA) = Strongly Agree

The results in Table 4.2 on to whether students learn from reading comments made by other students online revealed that, cumulatively 48.3% agreed while 30.6% disagreed and 21.2% were

unsure. The responses indicated that fairly, students could learn by reading other students' remarks posted online because the average mean = 3.20, near to code three, which on the scale used indicated not sure. As to whether, comments and questions from other students help students to learn easily, most teachers the 61.7% agreed while 25.8% disagreed and 12.4% were not sure. The average mean = 3.41 implied that teachers indicated that fairly, comments and questions from other students helped students to learn easily.

Regarding whether students had developed effective electronic communication skills through online interaction, combined the higher percentage (55.3%) of the teachers agreed while 30% disagreed and 14.7% were not sure. The average mean = 3.34 suggested that students had fairly developed effective electronic communication skills through online interaction. About whether teachers felt that interacting with one another online increased students learning motivation, a highly significant percentage (86.5%) of the teachers agreed, while 27.1% disagreed and 13.5% were not sure. The average mean = 3.28 revealed that teachers indicated that fairly, students interacting with one another online increased students learning motivation. With respect to whether students enjoyed working in collaborative online activities, a larger percentage (42.9%) agreed, while 34.7% disagreed and 22.4% were not sure. The average mean = 3.09 meant that teachers felt that students fairly enjoyed working in collaborative online activities. To establish how over all the teachers rated student-student e-interaction, an average index was calculated for the concept. Table 4.3 presents the summary results.

Table 4.3:*Summary Results for Student-Student E-interaction*

	Descriptives			Statistic	Std. Error
student-student	Mean			3.26	0.07
e-interaction	95% Confidence	Lower Bound		3.12	
	Interval for Mean	Upper Bound		3.40	
	5% Trimmed Mean			3.29	
	Median			3.40	
	Variance			0.85	
	Std. Deviation			0.92	
	Minimum			1.00	
	Maximum			5.00	
	Range			4.00	
	Interquartile Range			1.30	
	Skewness			-0.48	0.19
	Kurtosis			-0.27	0.37

The results in Table 4.3 show a mean =3.26 close to median 3.40 but with a negative skew (skew = -0.48) which suggest that the results were normally distributed. The high mean also meant that teachers rated student- student e- interaction to be high. The low standard deviation = 0.07 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.1.

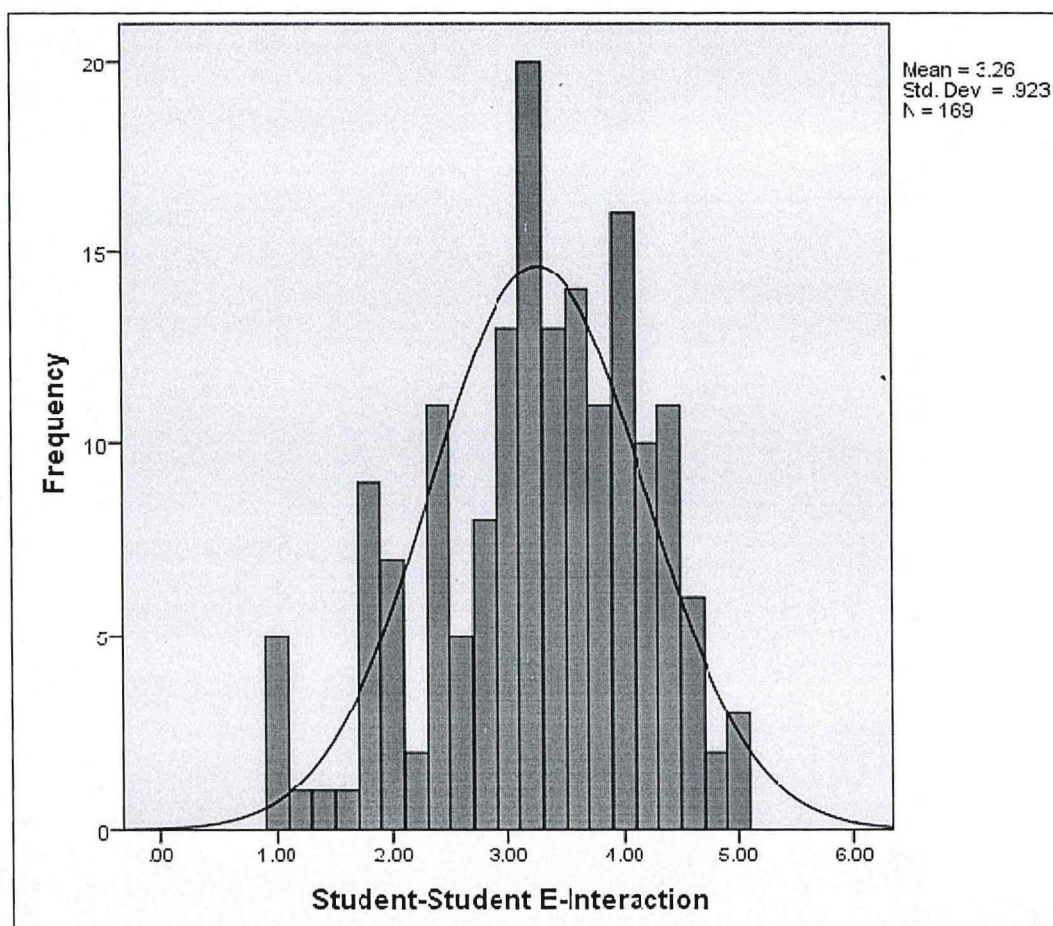


Figure 4.1:

Histogram for Student-Student E-Interaction

Figure 4.1 reveal that teachers rated student – student e- interaction fair (mean =3.26). The standard deviation = 0.923 imply that the results were normally distributed. Therefore, results on student-student E- interaction were fit for analysis.

4.3.2 Student- Teacher E- interaction. The concept of Student- teacher E- interaction was studied using six items. Below in Table 4.4 are descriptive results on the concept.

Table 4.4:*Descriptive Results for Student-Teacher E-Interaction*

Student Interaction	-Teacher	E-	SD	D	NS	A	SA	Means
Students ask questions during online lessons			13 (7.6%)	26 (15.3%)	24 (14.1%)	85 (50.0%)	22 (12.9%)	3.45
I am able to make students share ideas during online lessons			12 (7.1%)	24 (14.1%)	21 (12.4%)	89 (52.4%)	24 (14.1%)	3.52
I am able to use all kinds of interesting all kinds of interesting materials in online classes			12 (7.1%)	16 (9.4%)	19 (11.2%)	110 (64.7%)	24 (14.1%)	3.56
Involve students in the learning process during online lessons			12 (7.1%)	29 (17.1)	19 (11.2%)	86 (50.5%)	24 (14.1%)	3.48
I am able to explain content to students sufficiently when teaching online			14 (8.2%)	25 (14.7%)	15 (8.8%)	99 (58.2%)	17 (10%)	3.47
I allow students to ask speak up to share ideas during online classes			12 (7.1%)	16 (9.4%)	15 (8.8%)	84 (49.4%)	43 (25.3%)	3.76

The results in Table 4.4 As to whether students asked questions during online lessons, majority percentage (62.9%) agreed while 22.9% disagreed and 14.1% were not sure. The average mean = 3.45 suggested that teachers indicated that students fairly asked questions during online lessons. Regarding, whether teachers were able to make students share ideas during online classes, the majority percentage (68.5%) agreed while 21.2% disagreed and 12.4% were not sure. The high

mean = 3.52 close to code 4 implied that teachers agreed that students shared ideas during online classes.

With respect to whether teachers were able to use all kinds of interesting materials in online classes the majority percentage (78.8%) agreed, while 16.5% disagreed, and 11.2% were not sure. The mean = 3.56 implied that teachers agreed that they used all kinds of interesting materials in online classes. Regarding whether students were involved in the learning process, a larger percentage (64.6 %) agreed, while 24.2% disagreed, and 11.2% were not sure. The mean = 3.71 being close meant that teachers agreed that they involved students in the learning process during online lessons. With respect to whether teachers allowed students to speak up to share ideas during online a larger percentage (68.2%) agreed, 22.9% disagreed, while 8.8% were not sure. The mean = 3.47 was considered average suggesting that teachers were fairly able to explain content to students sufficiently while teaching online.

In respect to whether teachers allowed students to speak up to share ideas during online classes, a larger percentage (74.7%) agreed, 16.5% disagreed and 8.8% were not sure. The mean = 3.76 close to code 4 meant that teachers agreed that they allowed students to speak up to share ideas during online classes. To find out how teachers rated student- teacher e- interaction, an average index was calculated for the six items measuring the concept. The summary results are presented in Table 4.5.

Table 4.5:*Summary Results for Student -Teacher E-Interaction*

Descriptives		Statistic	Std. Error
Student-Teacher	Mean	3.54	0.07
e-Interaction	95% Confidence Lower Bound	3.41	
	Interval for Mean Upper Bound	3.67	
	5% Trimmed Mean	3.60	
	Median	3.83	
	Variance	0.74	
	Std. Deviation	0.86	
	Minimum	1.00	
	Maximum	5.00	
	Range	4.00	
	Interquartile Range	1.00	
	Skewness	-1.04	0.19
	Kurtosis	0.728	0.37

The results in Table 4.5 reveal mean = 3.54 close to median = 3.83 with a negative skew (skew = -1.04). The low standard deviation = 0.86 implied that the results were normally distributed. The mean = 3.54 close to 4 suggested that teachers rated student-teacher e- interaction to be high. The normal distribution of the results is also displayed by normal curve in Figure 4.2.

Figure 4.2:

Histogram for Student –Teacher E-interaction

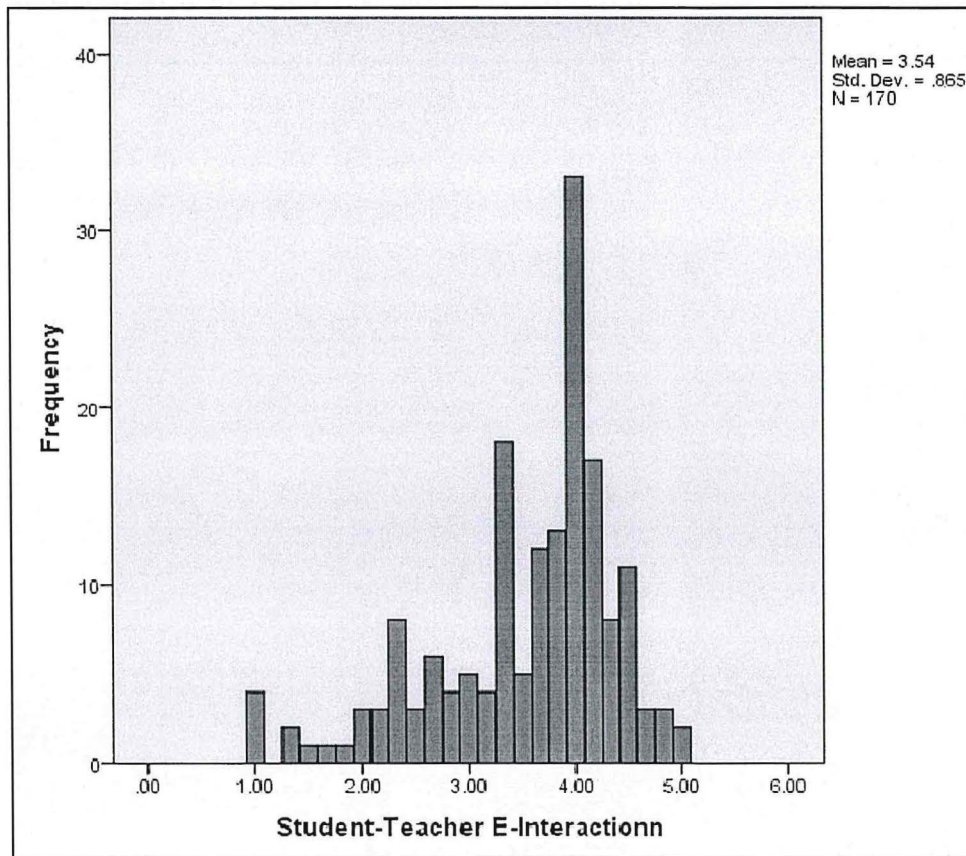


Figure 4.2 show that teachers rated student- teacher e- interaction to be high (mean = 3.54). Thus, the standard deviation = 0.865 meant that the results were normally distributed. Thus, with a normal curve, results on student- teacher e- interaction were fit for analysis

4.3.3 Student-Content E-Interaction. The concept of student content e- interaction was studied using seven items. Below in Table 4.6 are descriptive results on the concept.

Table 4.6:*Descriptive Results for Student-Content Interaction*

Student content interaction	SD	D	NS	A	SA	Means
Students can easily and simply use online learning	20 (11.8%)	40 (23.5%)	18 (10.6)	84 (49.4%)	8 (4.7%)	3.11
Students can access and simply search the system's resources	16 (9.4%)	25 (14.7%)	31 (18.2%)	86 (50.6%)	12 (7.1%)	3.31
Students can quickly locate course information within the system	12 (7.1%)	17 (10.0%)	17 (10.0%)	106 (62.4%)	18 (10.6%)	3.59
The system can be modified to accommodate group projects and student engagement	10 (5.9%)	28 (16.5%)	24 (14.1%)	100 (58.8%)	8 (4.7%)	3.40
E-learning provides students the opportunity of practicing what they learn in the lesson	8 (4.7%)	18 (10.6%)	11 (6.5%)	94 (55.3%)	39 (22.9%)	3.81
E-learning materials stimulate students' interest in learning	8 (4.7%)	13 (7.6%)	5 (2.9%)	96 (56.5%)	48 (28.2%)	3.95
The online materials in the subject I teach support student learning	6 (3.5%)	18 (10.6%)	13 (7.6%)	92 (54.1%)	41 (24.1%)	3.84

The results in Table 4.6 about whether teachers felt that usage of online learning was simple and easy for students showed that cumulatively, the larger percentage (54.1%) agreed, while 35.3% were disagreed and 10.6% disagreed. The average mean = 3.11 close to code 3 on the scale used corresponded to not sure suggested that teachers indicated that fairly, that usage of online learning was simple for students. In respect to whether teachers believed that the materials in the

system were easily searchable and available to students, a larger percentage (57.7%) agreed, while 24.1% disagreed and 18.2% were not sure. The average mean = 3.31 implied that teachers indicated that fairly, the materials in the system were easily searchable and available to students. With respect to whether course information can be easily found within the system by students, a larger percentage (73%) agreed, while 17.1% disagreed and 10.0% were not sure. The high mean = 3.59 close to 4 meant that teachers agreed that course information could be easily found within the system by students.

Regarding whether teachers believed that the system was adaptable for student interaction and group activities, a higher proportion (63.5%) agreed, while 22.4% disagreed and 14.1% were not sure. The average mean = 3.40 was considered average meaning that teachers believed that the system was fairly adaptable for student interaction and group activities. Regarding whether e-learning provided students' opportunity of practicing what they learnt in the lesson, the majority percentage (78.2%) agreed, while 15.3% disagreed, and 6.5% were not sure. The high mean = 3.81 indicated that teachers agreed that e-learning provided students opportunity of practicing what they learnt in the lesson. In respect to whether e- learning materials stimulated students' interest in learning, a larger proportion (84.7%) agreed, while 12.3% disagreed and 2.9% were not sure. The high mean = 3.95 implied that teachers agreed that e-learning provided students opportunity of practicing what they learnt in the lesson.

As to whether teachers believed that online materials in the subject they taught supported student learning, a larger proportion (78.2%) agreed, 14.1% disagreed, 7.6% were not sure. The high mean = 3.84 indicated that teachers believed that online materials in the subject they taught supported student learning. To find out how teachers rated student content e- interaction, an

average index was calculated for the seven items measuring the concept. The summary results are presented in Table 4.7.

Table 4.7:

Summary Results for Student –Content Interaction

Descriptives				Statistic	Std. Error
Content e- interaction	Mean			3.58	0.06
	95% Confidence Interval for Mean	Lower Bound		3.45	
		Upper Bound		3.70	
	5% Trimmed Mean			3.63	
	Median			3.86	
	Variance			0.67	
	Std. Deviation			0.82	
	Minimum			1.14	
	Maximum			5.00	
	Range			3.86	
	Interquartile Range			0.86	
	Skewness			-1.05	0.19
	Kurtosis			0.51	0.37

The results in Table 4.7 shows that a mean = 3.58 close to the median = 3.82 with a negative skew (skew = -0.92). The low standard deviation = 0.82 suggested that results were normally distributed. The high mean meant that teachers rated student content e- interaction high. The normal distribution of the results is also displayed by normal curve in Figure 4.3.

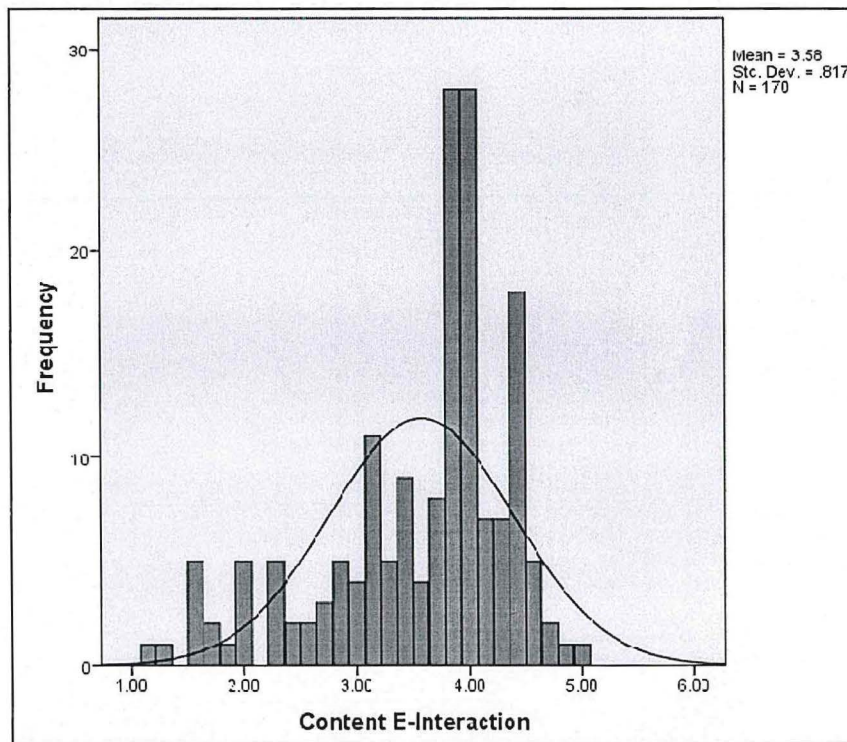


Figure 4.3:

Histogram for Student-Content E- Interaction

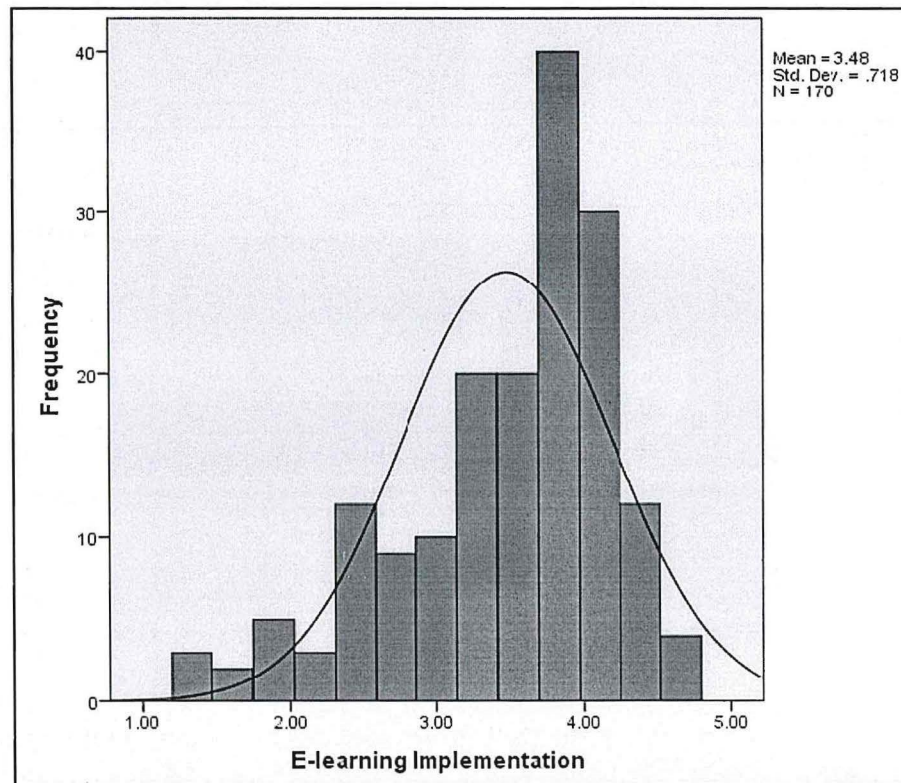
Figure 4.3 indicate that teachers rated student –content e- interaction to be high (mean = 3.58). The low standard deviation = 0.817 meant that the results were normally distributed. Thus, with the normal curve, the results on student-content e-interaction were fit for analysis.

4.3.4 E- Learning Implementation Index. To determine how the teachers rated effective e-learning implementation, an average index was created for three aspects measuring the concept that are student-student e- interaction (ESS1-ESS5), student- teacher E- interaction (EST1-EST6), student–content e- interaction (ESC1 -ESC7). The summary results are presented in Table 4.8.

Table 4.8:*Summary Results for E- learning Implementation*

	Descriptives		Statistic	Std. Error
E-learning Implementation	Mean		3.48	0.06
	95% Confidence Interval for Mean	Lower Bound	3.37	
		Upper Bound	3.59	
	5% Trimmed Mean		3.52	
	Median		3.72	
	Variance		0.52	
	Std. Deviation		0.72	
	Minimum		1.33	
	Maximum		4.61	
	Range		3.28	
	Interquartile Range		0.89	
	Skewness		-0.97	0.19
	Kurtosis		0.40	0.37

The results in Table 4.8 reveal a mean = 3.48 that is close to the median = 3.72 but with a negative skew (skew = -0.72) that suggested the results were normally distributed. The high mean implied that teachers rated effective implementation of e- learning to be high. The low standard deviation = 0.57 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.4.



Histogram for E-learning Implementation

Figure 4.4 show that teachers rated E- learning implementation to be high (mean = 3.48). The standard deviation = 0.718 meant that the results were normally distributed. Thus, results on e-learning implementation were fit for analysis. The factors measuring e-learning implementation are presented in the structural model, Figure 4.5.

4.3.5 E-learning implementation Structural Model. The structural model (Figure 4.5) presents the measures of e-learning implementation and their indicators. The measures are tangible, intangible and capabilities.

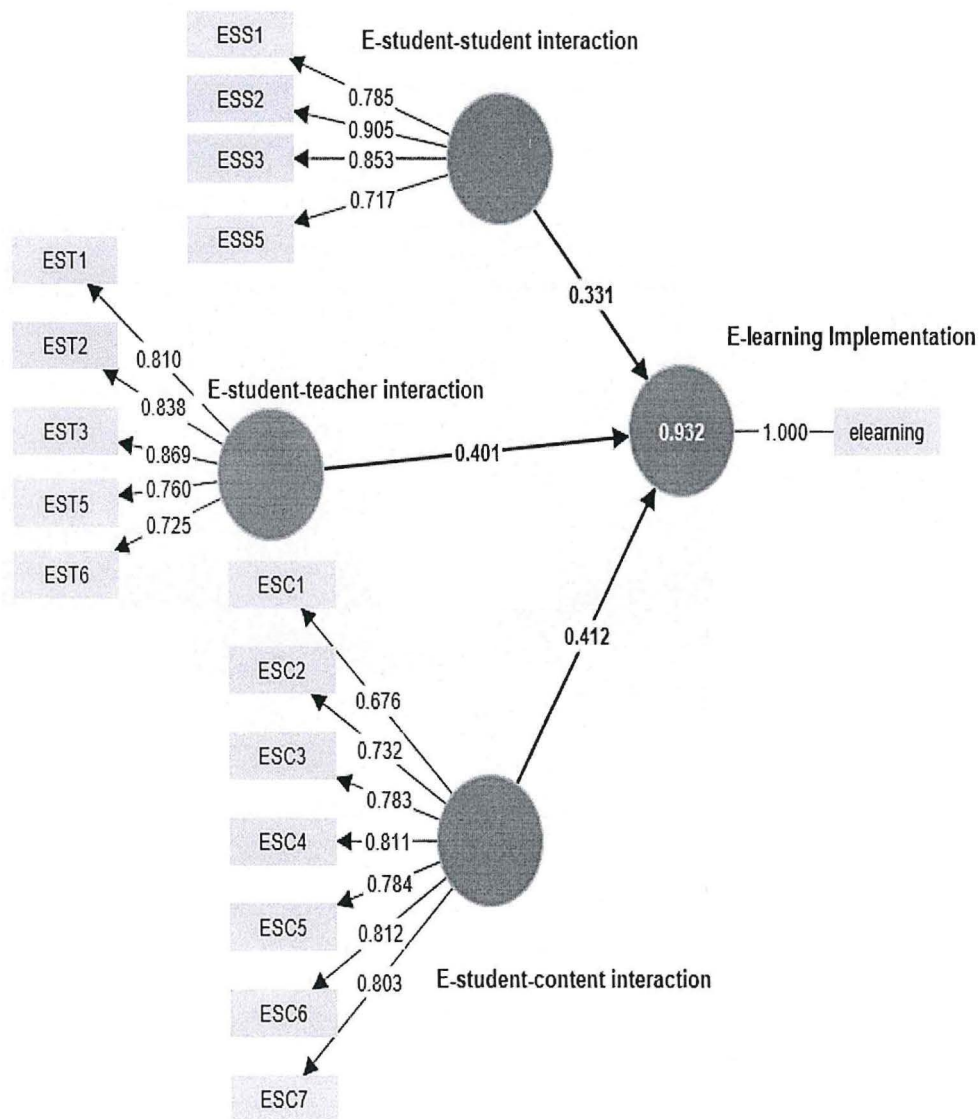


Figure 4.5:

Effective E-learning Implementation Structural Model

The structural model (Figure 4.5) describes the concept of effective e- learning Implementation, the model indicates that effective e-learning implementation is a multi-dimensional concept that involves student-student e- interaction, student- teacher e- interaction and student content e- interaction. The factor loadings obtained show that for the construct of student- student e- interaction, four out of five indicators measuring the construct loaded highly above the minimum validity. Thus, item (ESS4) did not load and was removed. Student-teacher e- interaction five out of the six items measuring the concept loaded highly, item (EST4) did not load and was removed. For student content e- interaction all the seven items measuring the construct loaded above the minimum validity of 0.5 when using factor analysis as recommended by Hair Jr. et. al (2021) Therefore, the items retained for all the constructs in the model were valid measures of those constructs. Those items which were dropped were excluded from subsequent analyses.

4.4 Description of School Resources

The independent variable of the study is school resources measured in terms of tangible resources, intangible resources and schools' capabilities. The descriptive results on the same follow.

4.4.1 Description of Schools Tangible Resources. The first objective of this study sought to examine whether schools' tangible resources influence e-learning. Tangible resources were studied using three constructs that are ICT Teaching Facilities, School ICT policy, and library E-resources. Below follow results on the three concepts.

4.4.1.1 ICT Teaching Facilities. The concepts of ICT Teaching Facilities were studied using six items. Below in Table 4.9 are descriptive results on the concept.

Table 4.9:

Descriptive Results for ICT Teaching Facilities

ICT teaching facilities	SD	D	NS	A	SA	Means
Internet speed at the school is good	22 (12.9%)	37 (21.8%)	24 (14.1%)	67 (39.4%)	20 (11.8%)	3.15
The school provides sufficient internet	13 (7.6%)	55 (32.4%)	41 (24.1%)	41 (24.1%)	20 (11.8%)	3.00
This school provides me sufficient opportunities to improve my technology knowledge	17 (10.0%)	28 (16.5%)	13 (7.6%)	74 (43.5%)	38 (22.4%)	3.51
Computer rooms or laboratories lighting, air condition and arrangement are suitable for instruction in this school	6 (3.5%)	22 (12.9%)	14 (8.2%)	83 (48.8%)	45 (26.5%)	3.81
The computers of the school have sufficient licensed software programs such as zoom, Google classroom or any other	10 (5.9%)	29 (17.1%)	28 (16.5%)	84 (49.4%)	19 (11.2%)	3.42
Learning materials can be easily downloaded for personal use	7 (4.1%)	43 (25.3%)	13 (7.6%)	83 (48.8%)	24 (14.1%)	3.43

The findings in Table 4.9 about whether the internet speed at the school was good, cumulatively the teachers revealed that the larger proportion (51.2%) of the respondents agreed, while 34.7% disagreed and 14.1% were not sure. The average mean = 3.15 on the scale used corresponded to not sure suggested that the respondents indicated that fairly, internet speed at the school to be fairly good. With respect to whether the school provided sufficient data revealed that the larger percentage (35.9%) agreed while 40%% disagreed, and 24.1% were not sure. The average mean = 3.00 suggested that the respondents indicated that fairly, the school provided sufficient internet. Regarding whether the school provided them with sufficient opportunities to improve their technology knowledge revealed that, the majority percentage (65.9%) agreed while 26.5% disagreed, 7.6% were not sure. The high mean = 3.51 close to code 4 on the scale used corresponded with agreed implied that teachers agreed that school provided them with sufficient opportunities to improve their technology knowledge

Regarding whether Computer rooms or laboratories lighting, air condition and arrangement were suitable for instruction in that school indicated that, majority percentage (75.3%) agreed, while 16.4% disagreed and 8.2% were not sure. The high mean = 3.81 implied that respondents agreed that Computer rooms or laboratories lighting, air condition and arrangement were suitable for instruction in that school. As to whether the computers of the school had sufficient licensed software programs such as zoom, Google classroom or any other revealed that the larger percentage (60.6%) agreed, while 39% disagreed and 16.5% were not sure. The average mean = 3.42 suggested that respondents indicated that fairly, that the computers of the school had sufficient licensed software programs such as zoom, Google classroom or any other. Regarding whether learning materials could be easily downloaded for personal use revealed that the larger percentage (62.9%) agreed, while 29.4% disagreed and

7.6% were not sure. The average mean = 3.43 indicated that respondents implied fairly that learning materials could be easily downloaded for personal use. For the six items evaluating the concept, an average index was produced. Table 4.10 displays the final results in summary.

Table 4.10:

Summary Results for ICT Teaching Facilities

Descriptive		Statistic	Std. Error
ICT	Mean	3.39	0.06
Teaching	95% Confidence Interval		
Facilities.	for Mean	Lower Bound	3.35
		Upper Bound	3.52
	5% Trimmed Mean	3.40	
	Median	3.66	
	Variance	0.81	
	Std. Deviation	0.90	
	Minimum	1.00	
	Maximum	5.00	
	Range	4.00	
	Interquartile Range	1.33	
	Skewness	-0.39	0.18
	Kurtosis	-0.37	0.37

The results in Table 4.10 show a mean = 3.39 close to median = 3.66 but with a negative skew (skew = -0.39) which implied that the results were normally distributed. The high mean also meant that teachers rated ICT teaching facilities to be high. The low standard deviation = 0.90 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.6.

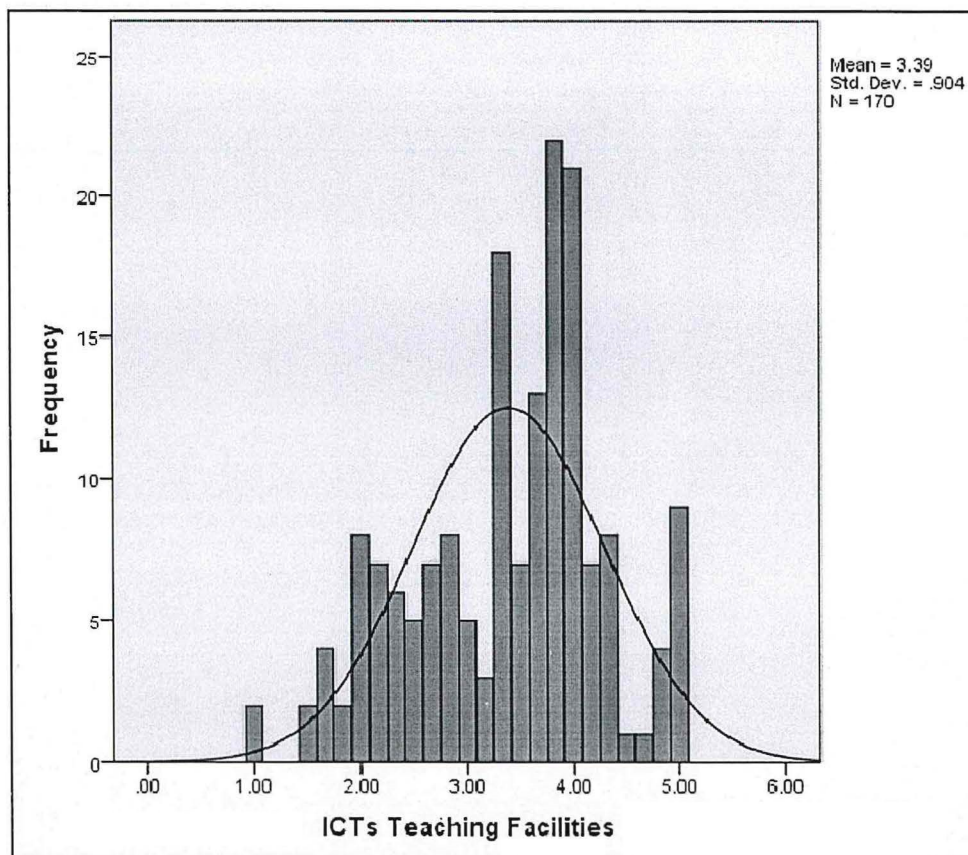


Figure 4.6:

Histogram for ICT Teaching Facilities

Figure 4.6 shows that teachers rated their ICT teaching facilities to be high (mean = 3.39). The standard deviation = 0.904 meant that the results were normally distributed. Thus, results on school ICT Facilities were fit for analysis.

4.4.1.2 School ICT Policy. The concepts of school ICT policy studied using five items. Below in Table 4.11 are the descriptive results on the concept.

Table 4.11:*Descriptive Results for School ICT policy*

School ICT Policy	SD	D	NS	A	SA	Means
Teachers are informed about the administration's prospective technological endeavours	12 (7.1%)	26 (15.3%)	14 (8.2%)	96 (56.5%)	22 (12.9%)	3.53
The school has established guidelines for use of ICT in teaching and learning	13 (7.6%)	12 (7.1%)	12 (7.1%)	101 (59.4%)	32 (18.8%)	3.74
The school has a policy in place focused on ICT implementation in teaching and learning system	16 (9.4%)	20 (11.8%)	30 (17.6%)	77 (45.3%)	27 (15.9%)	3.46
The school ICT policy provides possibilities for use of ICT in teaching and learning	8 (4.7%)	23 (13.5%)	30 (17.6%)	84 (49.4%)	25 (14.7%)	3.55
The school has guidelines for curriculum content uploading or delivery	5 (2.9%)	18 (10.6%)	23 (13.5%)	83 (48.8%)	41 (24.1%)	3.80

The results in Table 4.11 regarding whether teachers were informed about the administration's prospective technological endeavours revealed that cumulatively, the majority percentage (69.4%) agreed, while 22.4% disagreed and 8.2% were not sure. The mean = 3.52 close to code 4 which on the scale employed corresponded with agreed implied that respondents accepted that

teachers were informed about the administration's prospective technological endeavours. In respect to whether the school had established guidelines for use of ICT in teaching and learning revealed that the larger percentage (78.2%) agreed, 14.2 disagreed and 7.1% were not sure. The high mean = 3.74 implied that teachers agreed that the school had established guidelines for use of ICT in teaching and learning. As to whether the school had a policy in place focused on ICT implementation in teaching and learning system revealed that the larger percentage (61.2%) agreed, 17.6% were not sure, while 14.7% disagreed. The average mean = 3.46 implied that the respondents indicated that fairly, schools had policies in place focused on ICT implementation in teaching and learning system. Regarding whether the school ICT policy provided possibilities for use of ICT in teaching and learning indicate that the larger percentage (64.1%) agreed, while 18.2% disagreed, 17.6% disagreed. The high mean = 3.55 implied that respondents agreed that the school ICT policy provided possibilities for use of ICT in teaching and learning,

With respect to whether the school had guidelines for curriculum content uploading or delivery indicated that the larger percentage (72.9%) agreed, 27.1% disagreed and 13.5% were not sure. The high mean = 3.80 implied that teachers believed that the school had guidelines for curriculum content uploading or delivery. To find out how teachers rated the School ICT policy, for the five items measuring the concept, an average index was determined. Table 4.12 displays the results in summary.

Table 4.12:*Summary Results for School ICT Policy*

		Descriptive		Statistic	Std. Error
School ICT policy	Mean			3.62	0.06
	95% Confidence Interval for Mean	3.49		3.48	
	5% Trimmed Mean	3.76		3.75	
	Median			3.66	
				3.80	
	Variance			0.780	
	Std. Deviation			0.89	
	Minimum			1.00	
	Maximum			5.00	
	Range			4.00	
	Interquartile Range			1.00	
	Skewness			-0.68	0.19
	Kurtosis			0.18	0.37

Results in Table 4.12 show a mean = 3.62 close to median = 4.00 but with a negative skew (skew = -0.62) which suggested that the results were normally distributed. The high mean also meant that teachers rated their school ICT policy as high. The low standard deviation = 0.89 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.7.

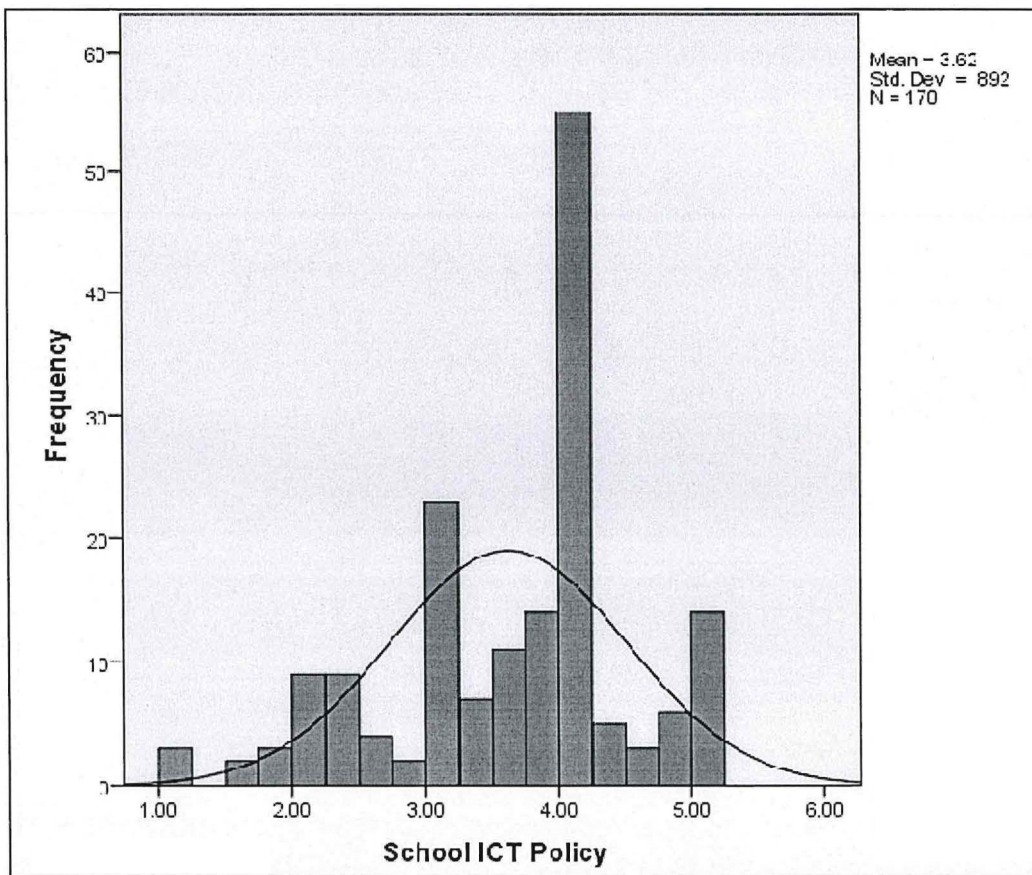


Figure 4.7:

Histogram for School ICT Policy

Figure 4.7 shows teachers rated their superiors' supportive leadership behaviours to be high (mean = 3.62). The standard deviation = 0.892 meant that the results were normally distributed. Thus, results on school ICT policy were fit for analysis.

4.4.1.3 Library E-Resource. The concept of Library e-resources was studied using five items. Table 4.13 are descriptive results on the concept.

Table 4.13:*Descriptive Results for Library E-resources*

Library E- resources	SD	D	NS	A	SA	Means
The school has online databases	14 (8.2%)	45 (26.5%)	27 (15.9%)	59 (34.7%)	25 (14.7%)	3.21
Can access diverse electronic resources using the school portal	19 (11.2%)	27 (15.9%)	24 (14.1%)	64 (37.6%)	36 (21.2%)	3.41
The school library e-resources interface makes it easy to access e-journals	14 (8.2%)	44 (25.9%)	39 (22.9%)	56 (32.9%)	17 (10.0%)	3.10
The library has facilities for using internet services	17 (10.0%)	27 (15.9%)	20 (11.8%)	73 (42.9%)	33 (19.4%)	3.45
The school online sources have sufficient resources	14 (8.2%)	54 (31.8%)	19 (11.2%)	65 (38.2%)	18 (10.6%)	3.11

The results in Table 4.13 regarding whether the schools had online databases cumulatively revealed that the larger percentage (49.4%) agreed, while 34.7% disagreed and 15.9% were not sure. The average mean = 3.21 on the scale used corresponded to not sure suggested that the respondents indicated that fairly, schools had online databases. With respect to whether teachers could access diverse electronic resources using the school portal revealed that the larger percentage (58.8%) agreed while 27.1% disagreed and 14.1% were not sure. The average mean = 3.41 suggested that teachers indicated that fairly that they could access diverse electronic resources using the school portal.

Regarding whether the school library e-resources interface made it easy to access e-journals indicated that the larger percentage (42.9%) agreed, 34.9% disagreed 22.9% were not sure. The average mean = 3.10 suggested that the respondents indicated that fairly that the school

library e-resources interface made it easy to access e-journals. Regarding whether the library had facilities for using internet services indicated that, the majority percentage (62.3%) agreed, 25.9% disagreed and 11.8% were not sure. The average mean = 3.45 suggested that the respondents indicated that fairly libraries had facilities for using internet services.

Regarding whether the school online sources had sufficient resources revealed that the larger percentage (48.8%) agreed, 40% disagreed, while 11.2% were not sure. The average mean = 3.11 suggested that teachers fairly agreed that the school online sources had sufficient resources. To find out how library e- resources rated effective implementation of e-learning, an average index was calculated for the five items measuring the concept. The summary results are presented in Table 4.14.

Table 4.14:

Summary Results for Library E-resources

		Descriptive		Statistic	Std. Error
Library resources	E-	Mean		3.26	0.72
		95% Confidence Interval	Lower Bound	3.11	
		for Mean	Upper Bound	3.40	
		5% Trimmed Mean		3.30	
		Median		3.40	
		Variance		0.88	
		Std. Deviation		0.93	
		Minimum		1.00	
		Maximum		4.80	
		Range		3.80	
		Interquartile Range		1.40	
		Skewness		-0.63	0.16
		Kurtosis		-0.44	0.37

The results in Table 4.14 show a mean = 3.26 close to median = 3.40 but with a negative skew (skew = -0.63) which suggested that the results were normally distributed. The high mean also meant that teachers agreed that the library e-resources were adequate. The low standard deviation = 0.65 indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.8.

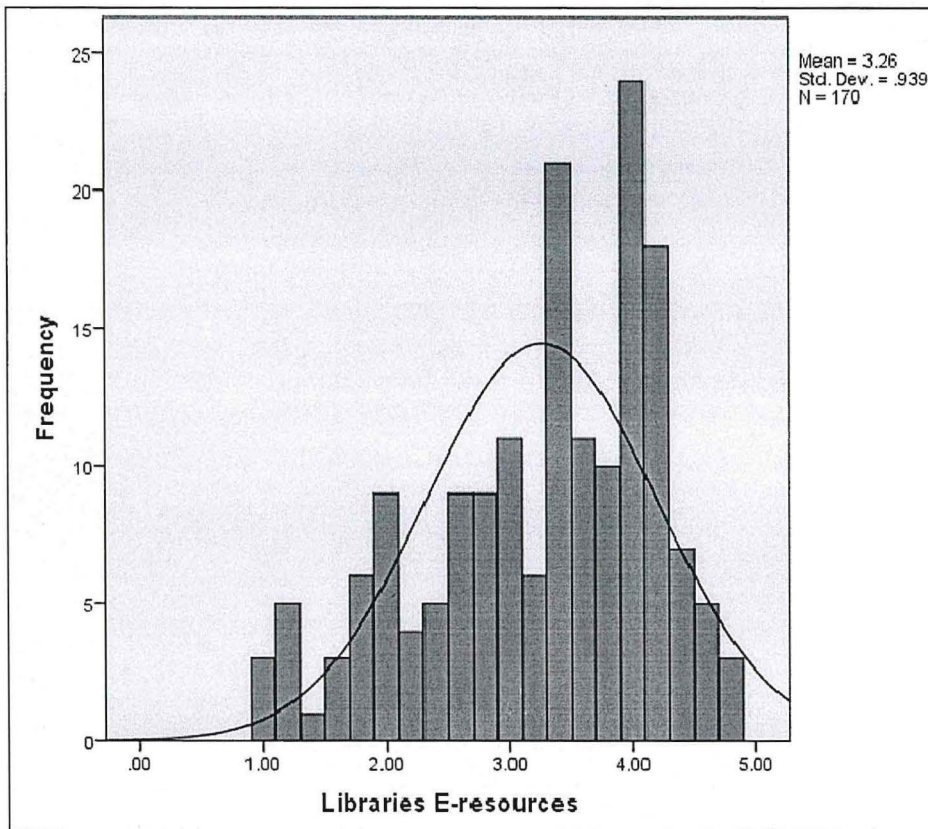


Figure 4.8:

Histogram for Library E-resources

Figure 4.8 show how teachers rated library e-resources to be high (mean = 3.26). The standard deviation = 0.939 meant that the results were normally distributed. Thus, the results on library e-resources were fit for analysis.

4.1.4.5 Tangible Resources Index. To test how teachers rated tangible resources, an average index was created for three aspects measuring the concepts that ICT teaching facilities (ITF.1-ITF.6), School ICT Policy (UIP.1- UIP.5), Library E-resources (LE.1.-LE.5). The summary results are presented in Table 4.15.

Table 4.15:

Summary Results for Tangible Resources

Descriptive		Statistic	Std. Error
Tangible Resources	Mean	3.42	0.06
	95% Confidence Interval		
	Lower Bound	3.30	
	Upper Bound	3.54	
	5% Trimmed Mean	3.44	
	Median	3.62	
	Variance	0.62	
	Std. Deviation	0.79	
	Minimum	1.13	
	Maximum	4.94	
	Range	3.81	
	Interquartile Range	1.19	
	Skewness	-0.57	0.18
	Kurtosis	-0.29	0.37

The results in Table 4.15 show a mean = 3.42 close to median = 3.62 but with a negative skew (skew = -0.57) which suggested that the results were normally distributed. The high mean also meant that teachers agreed that the library e- resources were adequate. The low standard deviation = 0.06 indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.9.

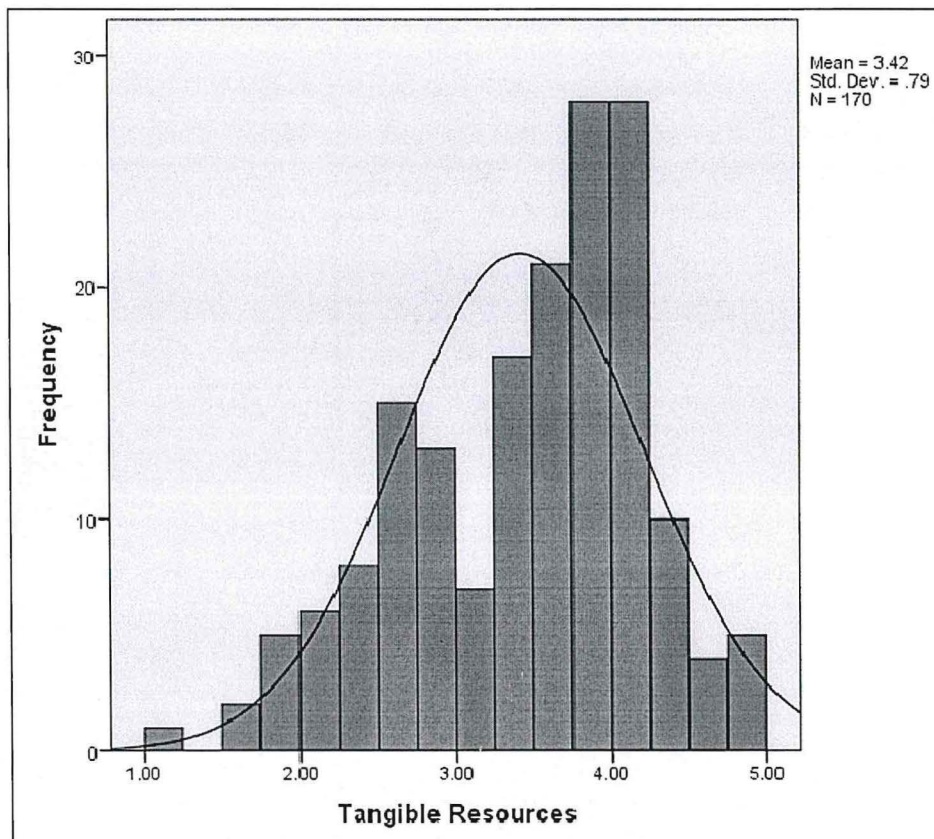


Figure 4.9:

Normal Distribution

Figure 4.9 show how teachers rated tangible resources to be high (mean = 3.42). The standard deviation = 0.79 meant that the results were normally distributed. Thus, the results on tangible

resources were fit for analysis results were normally distributed. The factors measuring tangible resources are presented in the structural model, Figure 4.10.

4.4.1.6 Tangible Resources Structural Model. The structural model (Figure 4.10) shows presents the measures tangible resources and their indicators. The measures are ICT Teaching facilities, school ICT policies and library e-resources.

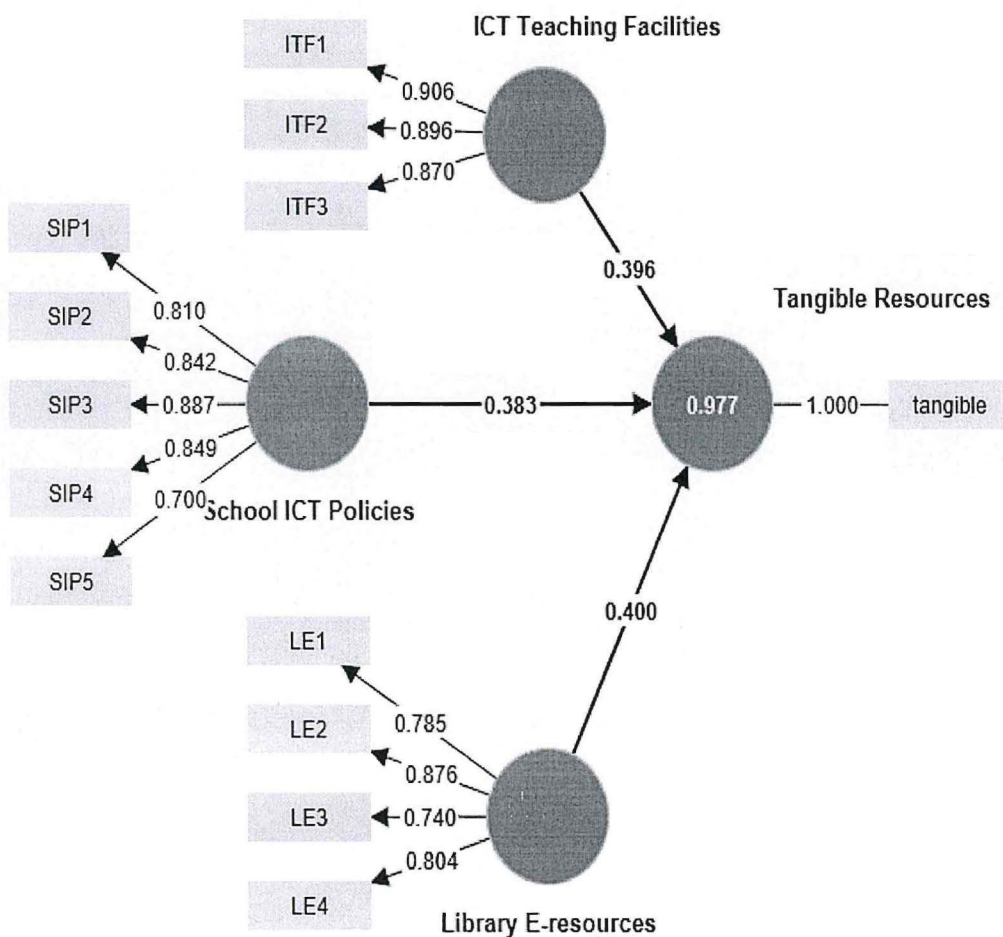


Figure 4.10:

Tangible Resources Structural Model

Figure 4.10 show schools' tangible resource was studied as a three-dimensional concept that included namely ICT teaching facilities, school ICT policies and Library e-resources. The factor loading revealed that only twelve items out of sixteen items that measured the construct loaded highly above the minimum validity value of 0.5 when using factor analysis. The four items (ITF4, ITF5, ITF6, LE5) did not load and were removed from the model. For ICT teaching facilities, three items out of six that measured the same loaded highly above the minimum validity value of 0.5 when using factor analysis and only one item (LE5) did not load above 0.5 and thus, was removed from the model. Thus, all the items that were retained in this model were valid measures of the respective constructs.

4.4.2 Schools' Intangible resources and E-learning Implementation. The second objective of the study was to examine whether schools' intangible resources had an influence. Intangible resources were studied in terms of technology knowhow, learning culture and relationship with stakeholders.

4.4.2.1 Technology Know-How. The concept of technology know-how was studied using five items. Table 4.16 are descriptive results on the concept.

Table 4.16:*Descriptive Results for Technical Know-How*

Technology Know-How	SD	D	NS	A	SA	Means
ICT based methodologies are very supportive in developing teaching approaches	8 (4.7%)	10 (5.9%)	18 (10.6%)	89 (52.4%)	45 (26.5%)	3.90
ICT resources for teaching and learning increase my productivity and effectiveness	7 (4.1%)	11 (6.5%)	12 (7.1%)	91 (53.5%)	49 (28.8%)	3.96
ICT enabled teaching is better than traditional methods of teaching	3 (1.8%)	9 (5.3%)	9 (5.3%)	90 (52.9%)	59 (34.7%)	4.13
Online surfing of learning material make my students more effective day by day	9 (5.3%)	9 (5.3%)	15 (8.8%)	97 (57.1%)	40 (23.5%)	3.88
It is convenient to share assignments, notes and study material through ICT	5 (2.9%)	16 (9.4%)	13 (7.6%)	98 (57.6%)	38 (22.4%)	3.87

The results in Table 4.16 with respect to whether ICT based methodologies were very supportive in developing teaching approaches cumulatively revealed that the larger percentage (78.9%) agreed, 10.6% were not sure and 10.6% disagreed. The mean = 3.91 close to code on the scale used corresponding to agreed implied that teachers agreed that ICT based methodologies were very supportive in developing teaching approaches. Regarding whether ICT resources for teaching and learning increased their productivity and effectiveness indicated that, majority percentage (82.3%) agreed, 10.6% were not sure, while 7.1% disagreed. The high mean = 3.96

implied that teachers agreed that ICT resources for teaching and learning increased their productivity and effectiveness. With respect to whether ICT enabled teaching was better than traditional methods of teaching revealed that the larger percentage (87.6%) agreed, while 7.1% disagreed and 5.3% were not sure. The high mean = 4.13 meant that teachers agreed that ICT enabled teaching was better than traditional methods of teaching.

Regarding whether online surfing of learning material made their students more effective day by day revealed that the larger percentage (80.6%) agreed, while 10.6% disagreed, while 8.8% disagreed. The high mean = 3.88 implied that teachers agreed that online surfing of learning material made their students more effective day by day. Regarding to whether it was convenient to share assignments, notes and study material through ICT teachers indicated that, majority percentage (80%) agreed while 12.4% disagreed, while, 7.6% were not sure. The high mean = 3.87 implied that teachers agreed that it was convenient to share assignments, notes and study material through ICT. To find out how teachers rated technology know how, an average index was calculated for the five items measuring the concept. The summary results are presented in Table 4.17.

Table 4.17:*Summary Results for Technology Know-how*

Descriptive		Statistic	Std. Error
Technology	Mean	3.95	0.05
Know-how	95% Confidence Interval		
	Lower Bound	3.83	
	Upper Bound	4.06	
	5% Trimmed Mean	4.01	
	Median	4.00	
	Variance	0.58	
	Std. Deviation	0.76	
	Minimum	1.60	
	Maximum	5.00	
	Range	3.40	
	Interquartile Range	1.00	
	Skewness	-1.08	0.18
	Kurtosis	1.39	0.37

The results in Table 4.17 show a mean = 3.95 close to median = 4.00 but with a negative skew (skew = -1.08) which suggested that the results were normally distributed. The high mean also meant that teachers rated the tangible resources to be high. The low standard deviation = 0.76 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.10

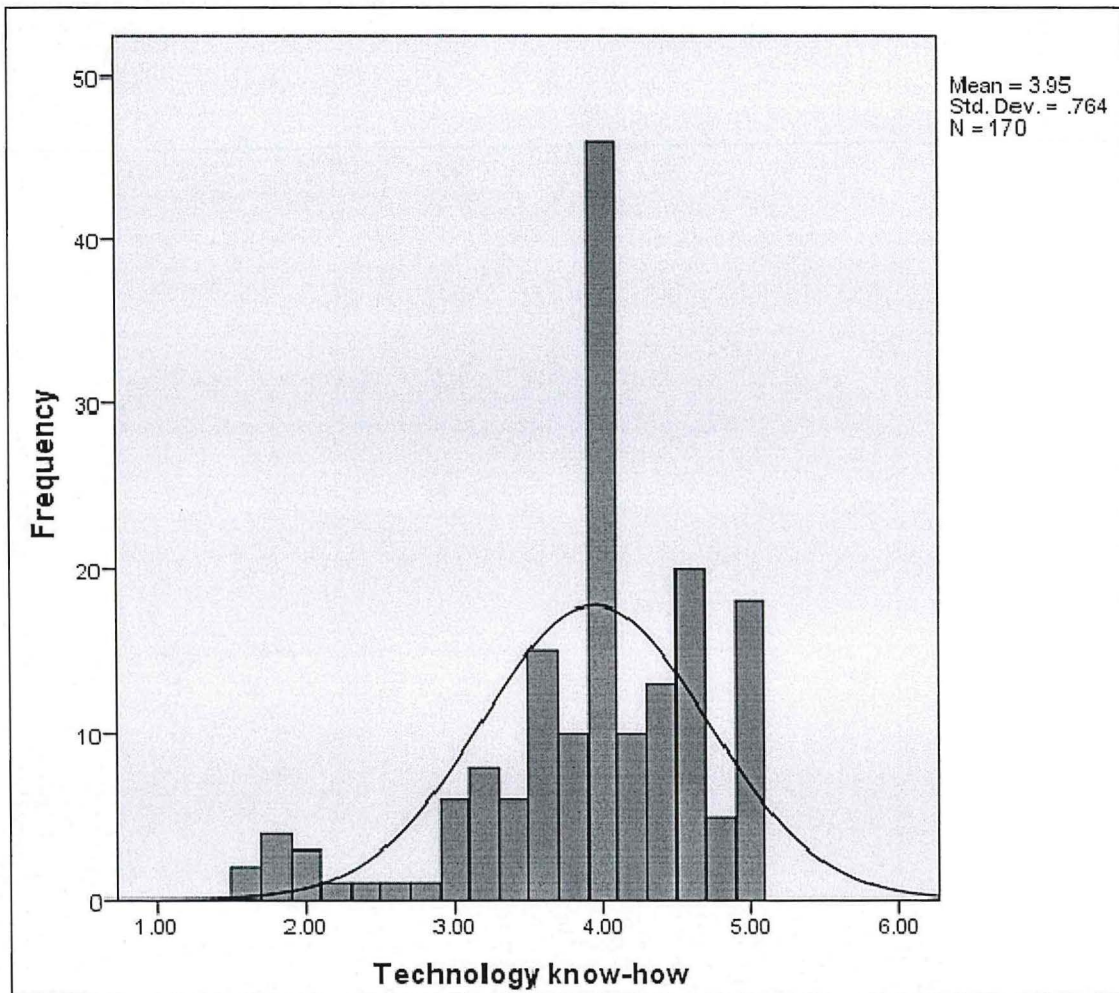


Figure 4.11:

Histogram for Technology Know-how

Figure 4.11 shows that teachers rated their technology know how to be high (mean = 3.95). The standard deviation = 0.764 meant that the results were normally distributed. Therefore, results on technology know how were fit for analysis.

4.4.2.1 Learning Culture. The concept of learning culture was studied using five items. Below in Table 4.18 are descriptive results on the concept.

Table 4.18:

Descriptive Results for Learning Culture

Learning culture	SD	D	NS	A	SA	Means
In this school, teachers help each other in use of ICT	13 (7.6%)	18 (10.6%)	17 (10.0%)	89 (52.4%)	33 (19.4%)	3.65
In this school, expert staff in ICT have been given time to support learning	4 (2.4%)	24 (14.1%)	14 (8.2%)	93 (54.7%)	35 (20.6%)	3.77
In this school lessons learned about e-teaching have been made available to all teachers	12 (7.1%)	41 (24.1%)	18 (10.6%)	84 (49.4%)	15 (8.8%)	3.29
In this school, teachers have been given control over the resources they need to accomplish their activities	9 (5.3%)	36 (21.2%)	18 (10.6%)	94 (55.3%)	13 (7.6%)	3.39
In this school, teachers have been mentored and coached in the use of ICT	11 (6.5%)	31 (18.2%)	18 (10.6%)	86 (50.6%)	24 (14.1%)	3.48

The results in Table 4.18 with respect to whether in this school, teachers helped each other in use of ICT cumulatively revealed that the larger percentage (71.8%) agreed while 18.2% disagreed, and 10.0% were not sure. The high mean = 3.65 close to code 4 on the scale used corresponded

to agreed, implied that teachers agreed in this school, teachers helped each other in use of ICT. Regarding whether in this school, expert staff in ICT had been given time to support learning indicated that, majority percentage (75.3%) agreed while 16.5% disagreed and 8.2% were not sure. The high mean = 3.77 agreed implied that teachers agreed that in their schools, expert staff in ICT had been given time to support learning. With respect to whether in this school lessons learned about e-teaching had been made available to all teachers revealed that the larger percentage (58.2%) agreed, 31.2% disagreed, and 10.6% were not sure. The average mean = 3.28 meant that that teachers indicated that fairly, lessons learned about e-teaching had been made available to all teachers.

Regarding whether in this school, teachers had been given control over the resources they needed to accomplish their activities day by day revealed that the larger percentage (62.9%) agreed, while 26.5% disagreed and 10.6% were not sure. The average mean = 3.38 implied that teachers indicated that fairly, agreed that in their schools, teachers had been given control over the resources they needed to accomplish their activities. Regarding to whether in this school, teachers had been mentored and coached in the use of ICT teachers indicated that, majority percentage (64.7%) agreed while 24.7% disagreed, and 10.6% were not sure. The average mean = 3.47 implied that respondents indicated that fairly, teachers had been mentored and coached in the use of ICT. To find out how teachers rated learning culture, an average index was calculated for the five items measuring the concept. The summary results are presented in Table 4.19.

Table 4.19:*Summary Results for Learning Culture*

Descriptive		Statistic	Std. Error
Learning culture	Mean	3.52	0.07
	95% Confidence Interval		
	for Mean	Lower Bound 3.37	
		Upper Bound 3.65	
	5% Trimmed Mean	3.55	
	Median	3.80	
	Variance	0.83	
	Std. Deviation	0.91	
	Minimum	1.00	
	Maximum	5.00	
	Range	4.00	
	Interquartile Range	1.05	
	Skewness	-0.72	0.18
	Kurtosis	0.17	0.37

The results in Table 4.19 shows a mean = 3.52 close to median = 3.80 but with a negative skew (skew = -0.72) which suggested that the results were normally distributed. The high mean also meant that full-time teachers rated learning culture to be high. The low standard deviation = 0.91 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.12.

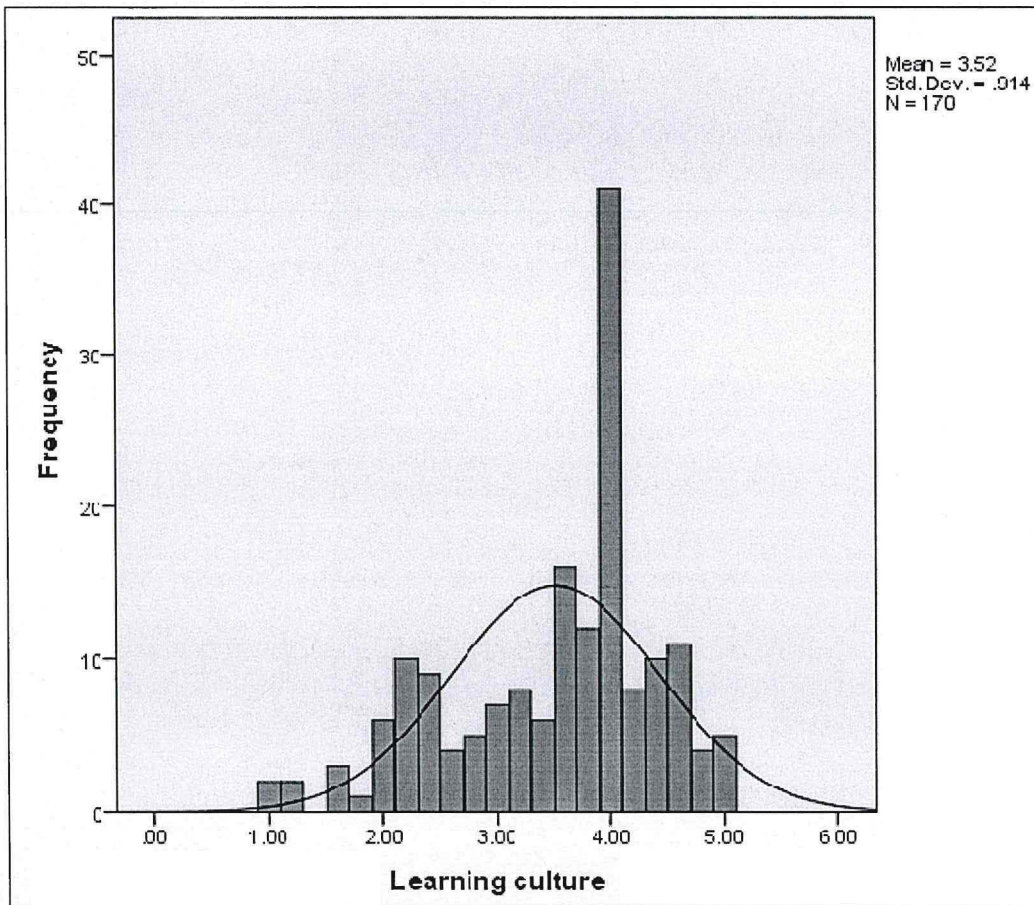


Figure 4.12:
Histogram for Learning Culture

Figure 4.12 shows that full-time teachers rated learning culture to be high (mean = 3.52). The standard deviation = 0.914 meant that the results were normally distributed. Thus, results on learning culture were fit for analysis.

4.4.2.2 Relationship with Stakeholders

The concept of relationship with stakeholders was studied using five items. Table 4.20 are descriptive results on the concept.

Table 4.20:

Descriptive Results for Relationship with Stake Holders

Relationship with stakeholders	SD	D	NS	A	SA	Means
The school has partnerships that can help it in implementation of e-learning	12 (7.1%)	37 (21.8%)	38 (22.4%)	60 (35.3%)	23 (13.5%)	3.26
Management of the school has addressed e-teaching demands of teachers and students	13 (7.6%)	32 (18.8%)	22 (12.9%)	82 (48.2%)	21 (12.4%)	3.39
The school management frequently engages teachers and students with respect to e-teaching	12 (7.1%)	38 (22.4%)	23 (13.5%)	69 (40.6%)	28 (16.5%)	3.37
The school takes time to assess key requirements of teachers and students for e-teaching	27 (15.9%)	23 (13.5%)	25 (14.7%)	85 (50.0%)	10 (5.9%)	3.16
The school has prepared information for teachers and students on e-teaching and learning	13 (7.6%)	49 (28.8%)	40 (23.5%)	53 (31.2%)	15 (8.8%)	3.05

The results in Table 4.20 with respect to whether the school had partnerships that could help it in implementation of e-learning, a larger percentage (48.8%) agreed, 28.8% disagreed, while 22.4% were not sure. The average mean = 3.26 close to code three which on the scale used corresponded to not sure implied that teachers fairly agreed the schools had partnerships that can help it in implementation of e-learning. Regarding whether management of the schools had addressed e-teaching demands of teachers and students indicated that, majority percentage (60.6%) agreed, 26.4% disagreed and 12.9% were not sure. The average mean = 3.38 suggested that respondents indicated that fairly, that management of the schools had addressed e-teaching demands of teachers and students.

With respect to whether the school management frequently engaged teachers and students with respect to e-teaching revealed that the larger percentage (57.1%) agreed, 29.4% disagreed, while 13.5% were not sure. The average mean = 3.37 suggested that teachers indicated that fairly that school management frequently engaged teachers and students with respect to e-teaching. Regarding whether the school took time to assess key requirements of teachers and students for e-teaching, revealed that the larger percentage (55.9%) agreed, 29.4% disagreed and 14.7% were not sure. The average mean = 3.16 implied that that teachers indicated that fairly, schools took time to assess key requirements of teachers and students for e-teaching. In respect to whether the school had prepared information for teachers and students on e-teaching and learning, a larger percentage 40% agreed, 36.4% disagreed while 23.5% were not sure. The average mean = 3.04 suggested that respondents indicated that fairly, the school prepared information for teachers and students on e-teaching and learning. To find out how teachers' relationship with the stakeholders, an average index was calculated for the five items measuring the concept. The summary results are presented in Table 4.21.

Table 4.21:*Summary Results for Relationship with Stakeholders*

Descriptive		Statistic	Std. Error
Relationship with Stakeholders	Mean	3.25	0.07
	95% Confidence Interval		
	Lower Bound	3.10	
	Upper Bound	3.38	
	5% Trimmed Mean	3.27	
	Median	3.40	
	Variance	0.86	
	Std. Deviation	0.92	
	Minimum	1.00	
	Maximum	5.00	
	Range	4.00	
	Interquartile Range	1.40	
	Skewness	-0.42	0.18
	Kurtosis	-0.27	0.37

The results in Table 4.21 show mean = 3.25 close to median = 3.40 but with a negative skew (skew = -0.42) which suggested that the results were normally distributed. The high mean also meant that teachers rated the relationship with other stakeholders to be high. The low standard deviation = 0.82 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.13.

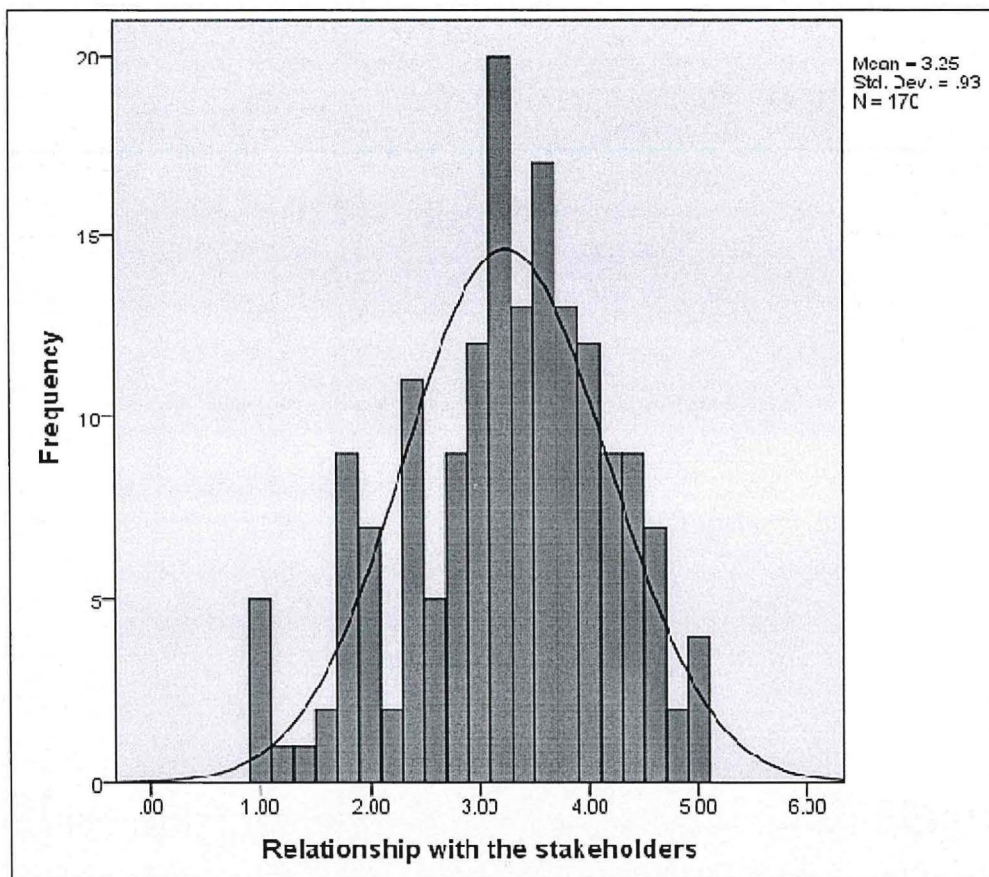


Figure 4.13:

Histogram for Relationship with Stakeholders

Figure 4.13 shows that teachers rated school relationship with the stakeholders to be high (mean = 3.25). The standard deviation = 0.93 meant that the results were normally distributed. Therefore, results on relationship with stakeholders were fit for analysis

4.4.2.3 Intangible Resources Index. To test how teachers rated intangible resources, an average index was created for three aspects measuring the concepts that technology knowhow, (TK.1-

TK.6), Learning culture (LC.1- LC.5), Relationship with stakeholders (RS.1-RS.5). The summary results are presented in Table 4.22.

Table 4.22:

Summary Results for Intangible Resources

Descriptive		Statistic	Std. Error
Intangible	Mean	3.57	0.06
Resources	95% Confidence Interval		
	Lower Bound	3.46	
	Upper Bound	3.67	
	for Mean		
	5% Trimmed Mean	3.60	
	Median	3.73	
	Variance	0.50	
	Std. Deviation	0.71	
	Minimum	1.40	
	Maximum	4.84	
	Range	3.40	
	Interquartile Range	1.00	
	Skewness	-0.67	0.18
	Kurtosis	-0.05	0.37

The results in Table 4.22 show a mean = 3.57 close to median = 3.72 but with a negative skew (skew = -0.67) which suggested that the results were normally distributed. The high mean also meant that teachers agreed that the library e- resources were adequate. The low standard deviation = 0.05 indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.14.

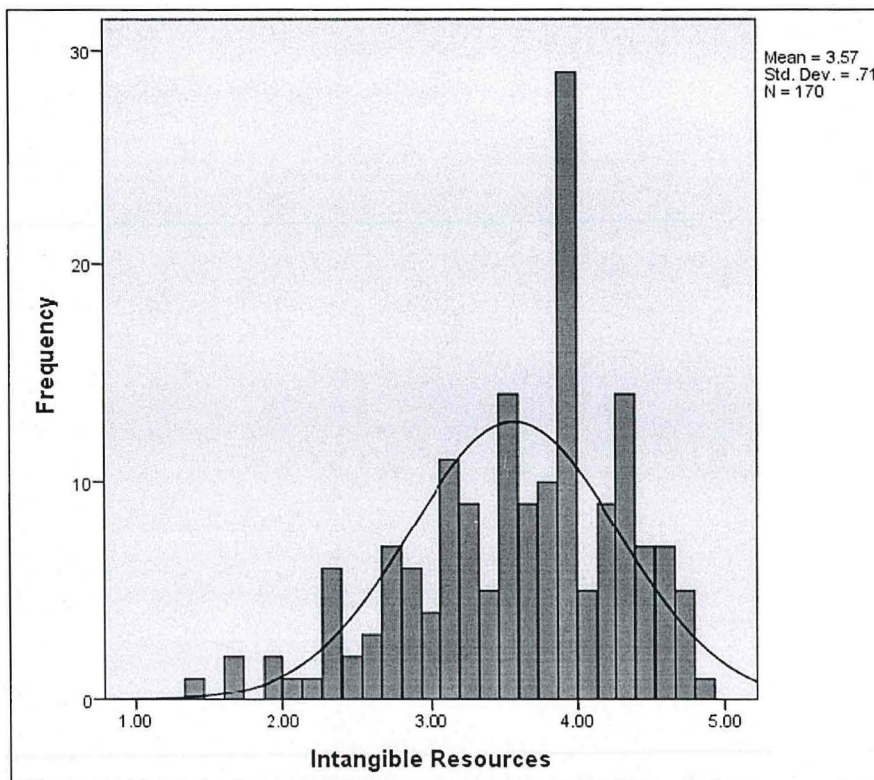


Figure 4.14:
Histogram for Intangible Resources

Figure 4.14 show how teachers rated tangible resources to be high (mean = 3.57). The standard deviation = 0.71 meant that the results were normally distributed. Thus, the results on tangible resources were fit for analysis.

4.4.2.4 Intangible Resources Structural Model. The structural model (Figure 4.15) shows presents the measures intangible resources and their indicators. The measures are technical know-how, learning culture and relationship with stakeholders.

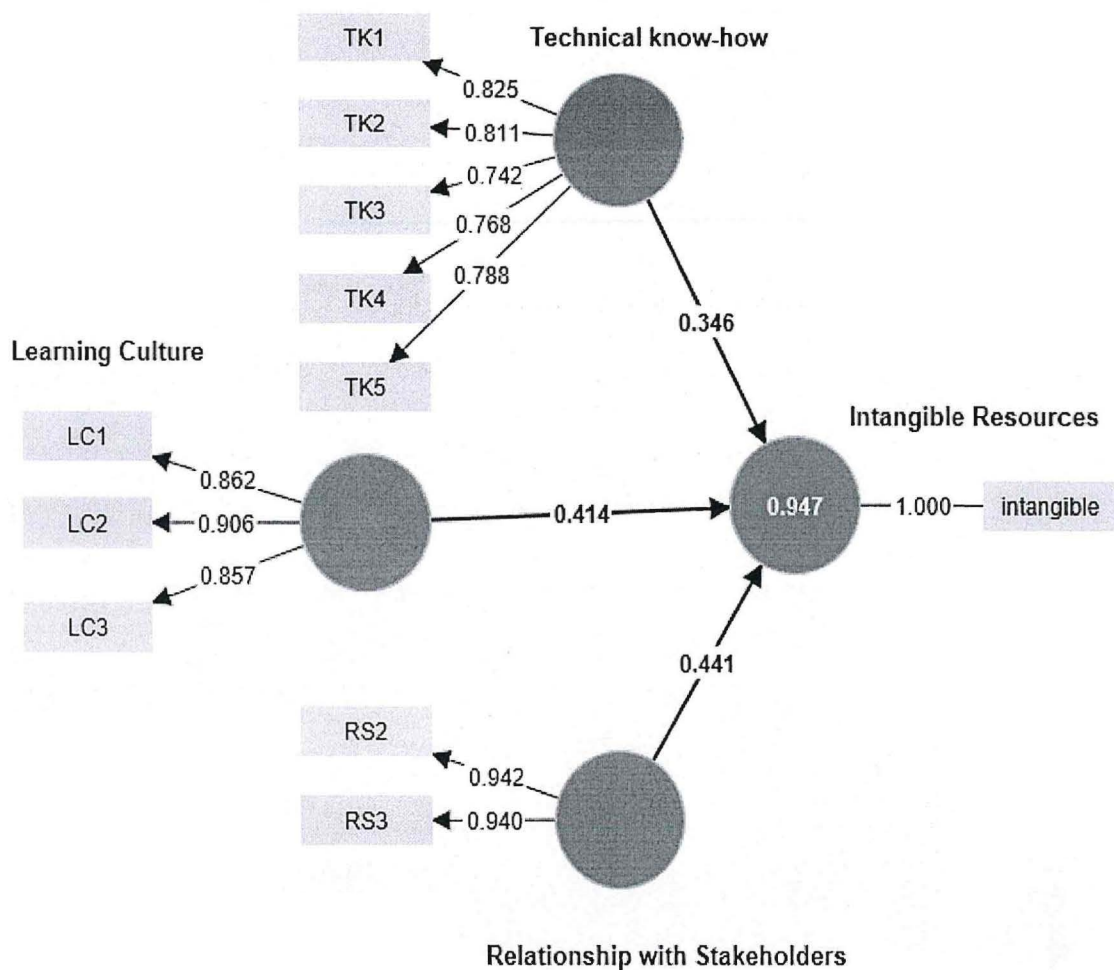


Figure 4.15:

Intangible Resources Structural Model

The structural model (Figure 4.15) for intangible resources shows that for the construct of technology know-how, all the five indicators loaded highly above the minimum value of 0.50 when using factor analysis (Hair Jr et al., 2021). For learning culture, three out of five indicators loaded highly and for relationship with stakeholders two out of five (RS 2 & 3) indicators loaded highly, the rest were dropped. This meant that the indicators retained for the constructs measuring intangible resources in the model were appropriate valid measures of those constructs.

4.4.3 Capabilities. The concept of capabilities was studied using measures that are experimentation, integration capability, and teaching content management. Table 4.23 presents descriptive results on the concept.

4.4.3.1 Experimentation. The concept of experimentation was studied using five items. Table 4.23 are descriptive results on the concept.

Table 4.23:

Descriptive Results for Experimentation

Experimentation	SD	D	NS	A	SA	Means
I have had a great opportunity to try various ICT teaching applications	8 (4.7%)	38 (22.4%)	10 (5.9%)	102 (60.0%)	12 (7.1)	3.42
I have access to and try ICT teaching relevant applications	12 (7.1%)	25 (14.7%)	16 (9.4%)	106 (62.4%)	11 (6.5%)	3.46
I have had the opportunity to try out how I can make use of ICT in teaching and learning	5 (2.9%)	21 (12.4%)	8 (4.7%)	106 (62.4%)	30 (17.6%)	3.79
Being able to try out ICT in teaching was important in my decision to use it.	6 (3.5%)	15 (8.8%)	14 (8.2%)	94 (55.3%)	41 (24.1%)	3.87
I decided to adopt ICT in learning after I carried out a pilot test	9 (5.3%)	47 (27.6)	24 (14.1%)	70 (41.2%)	35 (11.8%)	3.26

The results in Table 4.23 regarding whether teachers, had a great opportunity trying various ICT teaching applications a larger percentage (67.1%) agreed, 27.1% disagreed while 5.9% were not sure. The average mean = 3.42 close to code three which on the scale used corresponded to not sure implied that respondents indicated that fairly, they had a great opportunity trying various ICT teaching applications. As to whether teachers had had access to and tried ICT teaching relevant applications revealed that the larger percentage (68.9%) agreed while 21.8% disagreed, and 9.4% were not sure. The average mean = 3.46 suggested that teachers indicated that fairly they had access to and tried ICT teaching relevant applications. With respect to whether teachers had, had the opportunity to try out how they could make use of ICT in teaching and learning indicated that, the majority percentage (80%) agreed while 15.3% disagreed and 4.7% were not sure. The high mean = 3.79 close to code 4 on the scale used corresponded to agreed implied that teachers agreed that they had an opportunity to try out how they could make use of ICT in teaching and learning.

As to whether teachers regarded being able to try out ICT in teaching was important in their decision to use it revealed that, majority percentage (79.4%) agreed, while 12.3% disagreed and 8.2 % were not sure. The high mean = 3.87 implied that teachers believed that being able to try out ICT in teaching was important in their decision to use it. Regarding whether teachers decided to adopt ICT in learning after they had carried out a pilot test, a larger percentage (53%) agreed, while 32.9% disagreed and 14.1% were not sure. The average mean = 3.26 implied that teachers decided to adopt ICT in learning after they had carried out a pilot test. To find out how teachers rated their experimentation, an average index was calculated for the five items measuring the concept. The summary results are presented in Table 4.24.

Table 4.24:*Summary of Experimentation*

Descriptive		Statistic	Std. Error
Experimentation	Mean	3.56	0.05
	95% Confidence Interval		
	for Mean	Lower Bound 3.43	
		Upper Bound 3.69	
	5% Trimmed Mean	3.61	
	Median	3.80	
	Variance	0.72	
	Std. Deviation	0.84	
	Minimum	1.00	
	Maximum	5.00	
	Range	4.00	
	Interquartile Range	0.80	
	Skewness	-1.09	0.18
	Kurtosis	0.77	0.37

The results in Table 4.24 show a mean = 3.56 close to median = 3.80 but with a negative skew (skew = -1.09) which suggested that results were normally distributed. The high mean also meant that teachers rated their experimentation to be high. The low standard deviation = 0.84 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.16.

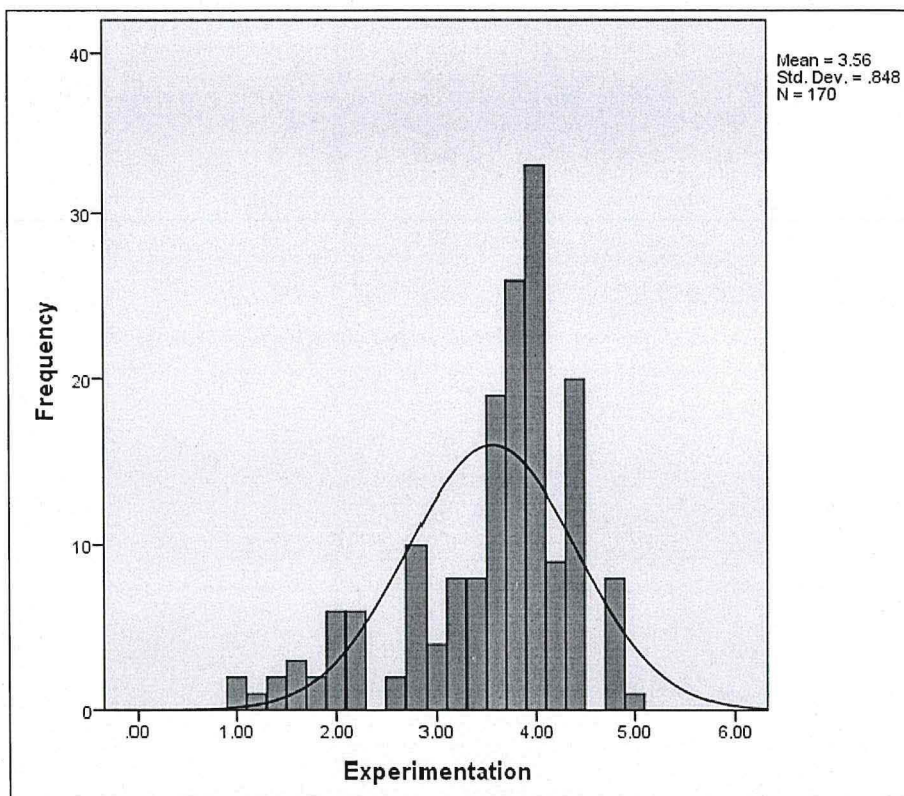


Figure 4.16:

Histogram for Experimentation

Figure 4.16 shows that teachers rated their experimentation to be high (mean = 3.56). The standard deviation = 0.848 meant that the results were normally distributed. Therefore, results on experimentation were fit for analysis.

4.4.3.2 Integration Capability. The concept of integration capability was studied using five items. Table 4.25 are descriptive results on the concept.

Table 4.25:*Descriptive results for Integration Capability*

Integration Capability	SD	D	NS	A	SA	Means
My students are prepared to deal with on-going technological change given their knowledge, talents, skills, and attitudes	9 (5.3%)	31 (18.2%)	21 (12.4%)	96 (56.5%)	13 (7.6%)	3.43
I use different ICT application to teach effectively	7 (4.1%)	27 (15.9%)	22 (12.9%)	98 (57.6%)	16 (9.4%)	3.52
Using ICT applications, I have been able to engage in sustained involvement with curriculum activities	5 (2.9%)	31 (18.2%)	15 (8.8%)	93 (54.7%)	26 (15.3%)	3.61
Using ICT I have supported elements of the learning process	3 (1.8%)	22 (12.9%)	15 (8.8%)	119 (70.0%)	11 (6.5%)	3.66
I have undertaken formative and/or summative assessment using ICT	8 (4.7%)	36 (21.2%)	15 (8.8%)	91 (53.5%)	20 (11.8%)	3.46
With ICT learners have been able to engage in independent learning through access to education at a time, place and pace of their own choosing	9 (5.3%)	35 (20.6%)	16 (9.4%)	101 (59.4%)	9 (5.3%)	3.39

The results in Table 4.25 regarding whether students had the knowledge, skills, abilities and attitudes to deal with on-going technological change (64.1%) agreed, 23.5% disagreed while 12.4% were not sure. The average mean = 3.42 close to code three which on the scale used

corresponded to not sure suggested that respondents indicated that fairly students had acquired the knowledge, skills, abilities and attitudes to deal with on-going technological change. As to whether teachers have used different ICT application to teach effectively revealed that the larger percentage (67%) agreed while 20% disagreed and 12.9% were not sure. The high mean = 3.52 implied that teachers agreed that they had used different ICT application to teach effectively relevant applications. With respect to whether teachers through ICT applications had been able to engage in sustained involvement with curriculum activities indicated that the larger percentage (70%) agreed while 21.2% disagreed and 8.8% were not sure. The high mean = 3.61 implied that teachers agreed that they had been able to engage in sustained involvement with curriculum activities.

As to whether teachers through using ICT had supported elements of the learning process, majority percentage (76.5%) agreed, 14.7% disagreed while 8.8 % were not sure. The high mean = 3.66 implied that teachers agreed that through using ICT, they had supported elements of the learning process. Regarding whether teachers had undertaken formative and/or summative assessment using ICT, a larger percentage (65.3%) agreed while 25.9% disagreed and 8.8% were not sure. The high mean = 3.70 implied that teachers agreed that they had undertaken formative and/or summative assessment using ICT. With respect to with ICT learners had been able to engage in independent learning through access to education at a time, place and pace of their own choosing, a larger percentage (64.7%) agreed, 25.9% disagreed while 9.4% were not sure. The average mean = 3.38 suggested that the respondents indicated that fairly, learners had been able to engage in independent learning through access to education at a time, place and pace of their own choosing. To find out how teachers rated their integration capability, an

average index was calculated for the six items measuring the concept. The summary results are presented in Table 4.26.

Table 4.26:

Summary Results for integration Capability

Descriptives			Statistic	Std. Error
Integration capability	Mean		3.51	0.06
	95% Confidence Interval for Mean	Lower Bound	3.40	
		Upper Bound	3.63	
	5% Trimmed Mean		3.56	
	Median		3.83	
	Variance		0.61	
	Std. Deviation		0.78	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.00	
	Skewness		-0.88	0.19
	Kurtosis		0.20	0.37

The results in Table 4.26 show a mean = 3.51 close to median = 3.83 with a positive skew (skew = 0.94) which suggested that the results were normally distributed. The high mean also meant that teachers rated their capability integration to be high. The low standard deviation = 0.78 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.15.

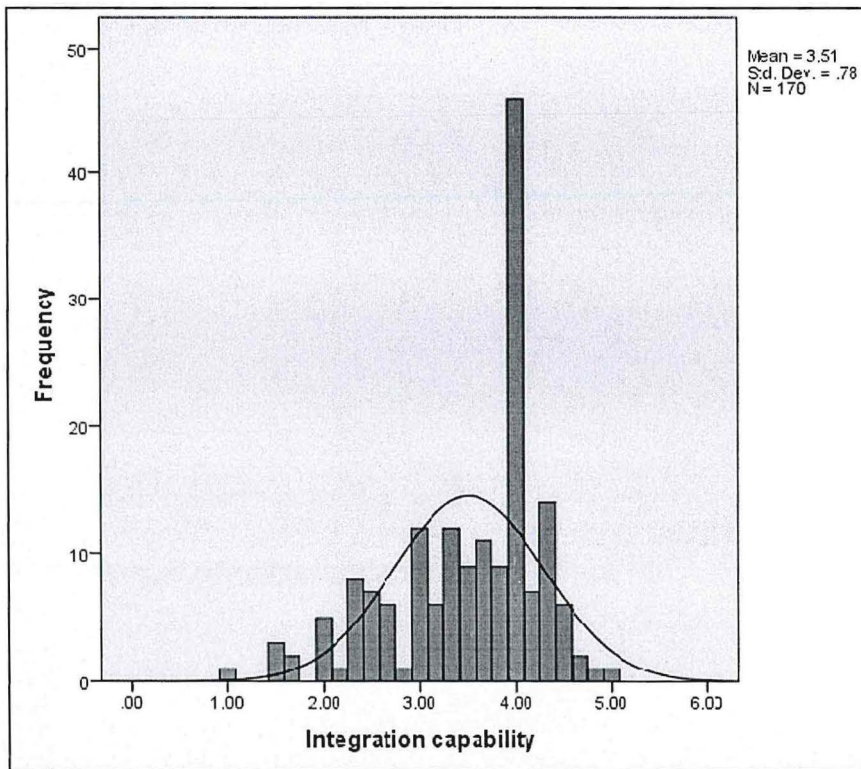


Figure 4.17:
Histogram for Integration Capability

Figure 4.17 shows that teachers rated their integration capability to be high (mean = 3.54). The standard deviation = 0.755 meant that the results were normally distributed. Thus, results on integration capability were fit for analysis.

4.4.3.3 Teaching content management. The concept of teaching content management was studied using six items. Table 4.27 are descriptive results on the concept.

Table 4.27:*Descriptive results for Teaching Content Management*

Teaching Content Management	SD	D	NS	A	SA	Means
ICT technologies facilitate the processes of capturing, categorising, storing, and retrieving teaching content	2 (1.2%)	15 (8.8%)	18 (10.6%)	101 (59.4%)	34 (20%)	3.88
I maintain and constantly upgrade content stored in the system	16 (9.4%)	19 (11.2%)	18 (10.6%)	102 (60%)	15 (8.8%)	3.47
When I need some teaching content, I know where to get it in the ICT system	9 (5.3%)	8 (4.7%)	4 (2.4%)	107 (62.9%)	42 (24.7%)	3.97
I access and use information and knowledge saved in the system of the school	9 (5.3%)	25 (14.7%)	12 (7.1%)	90 (52.9%)	34 (20%)	3.67

The results in Table 4.27 regarding whether ICT technologies facilitate the processes of capturing, categorising, storing, and retrieving teaching content (79.4%) agreed, while 10.0% disagreed and 10.6% were not sure. The high mean = 3.88 close to code 4 on the scale used corresponded to agreed implied that teachers agreed that ICT technologies facilitate the processes of capturing, categorising, storing, and retrieving teaching content. Regarding whether teachers maintain and constantly upgrade content stored in the system, (68.8) % agreed, while 20.6% disagreed and 10.6% were not sure. The average mean = 3.47 implied that teachers indicated that fairly maintained and constantly upgraded content stored in the system.

As to whether teachers know where to get teaching content in the ICT system the majority percentage 87.6% agreed, 10% disagreed while 2.4% were not sure. The high mean = 3.97 implied that teachers knew where to get teaching content in the ICT system. Regarding whether teachers, access and use information and knowledge saved in the system of the school, majority percentage 72.9% agreed, while 20% disagreed and 7.1% were not sure. The high mean = 3.67 implied that teachers agreed that they could access and use information and knowledge saved in the system of the school. To find out how teachers rated their teaching content management an average index was calculated for the four items measuring the concept. The summary results are presented in Table 4.28.

Table 4.28:

Summary Results for teaching content management

Descriptive				Statistic	Std. Error
Teaching	Mean			3.75	0.06
Content	95% Confidence Interval	Lower Bound		3.62	
Management	for Mean	Upper Bound		3.87	
	5% Trimmed Mean			3.81	
	Median			4.00	
	Variance			0.69	
	Std. Deviation			0.83	
	Minimum			1.00	
	Maximum			5.00	
	Range			4.00	
	Interquartile Range			0.75	
	Skewness			-1.37	0.18
	Kurtosis			1.59	0.37

The results in Table 4.28 show a mean = 3.75 close to median = 4.00 but with negative skew (skew = -1.37) which suggested that the results were normally distributed. The high mean also meant that teachers rated their content management to be high. The low standard deviation = 0.83 in Table 4.28 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.18.

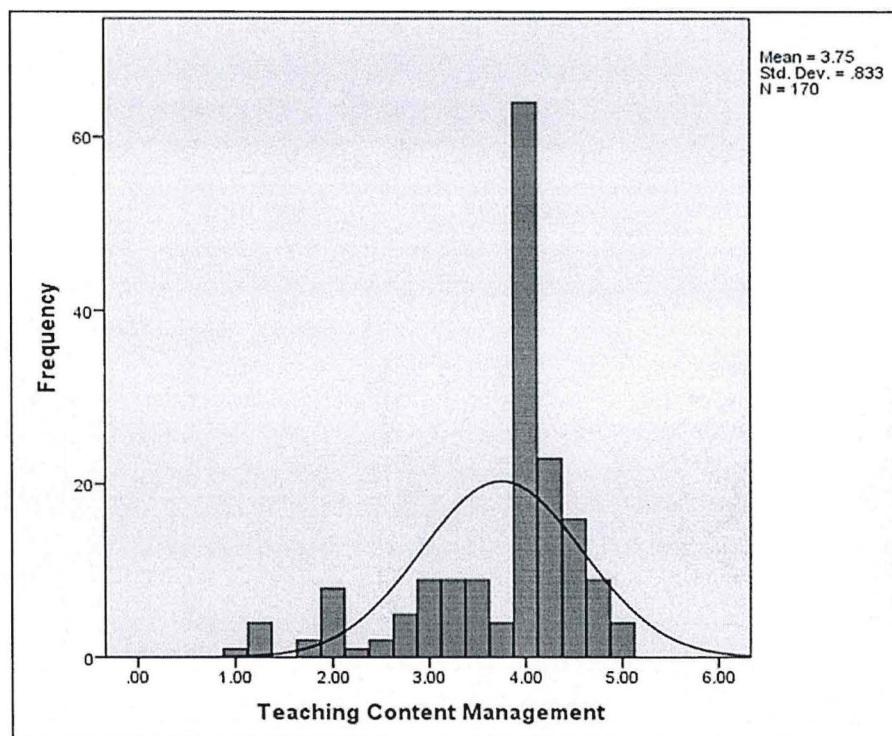


Figure 4.18:

Histogram for Teaching Content Management

Figure 4.18 shows that teachers rated their teaching content management to be high (mean = 3.75). The standard deviation = 0.833 meant that the results were normally distributed. Thus, results on teaching content management were fit for analysis.

4.4.3.4 Capabilities Index. To test how teachers rated capabilities, an average index was created for three aspects measuring the concepts that included Experimentation (EX1- EX5), integration capability (IC1- IC6), and teaching content management (KM1- KM5). The summary results are presented in Table 4.29.

Table 4.29:

Summary Results for Capabilities

Descriptive		Statistic	Std. Error
Capabilities	Mean	3.61	0.05
	95% Confidence Interval		
	for Mean	Lower Bound	3.49
		Upper Bound	3.72
	5% Trimmed Mean	3.64	
	Median	3.86	
	Variance	0.56	
	Std. Deviation	0.75	
	Minimum	1.27	
	Maximum	0.75	
	Range	6.53	
	Interquartile Range	5.27	
	Skewness	-0.64	0.18
	Kurtosis	1.64	0.37

The results in Table 4.29 show a mean = 3.61 close to median = 3.86 but with negative skew (skew = -0.64) which suggested capabilities to be high. The low standard deviation = 0. 05 also indicated normal distribution of the responses. The normal distribution of the results is also displayed by the normal curve in Figure 4.19.

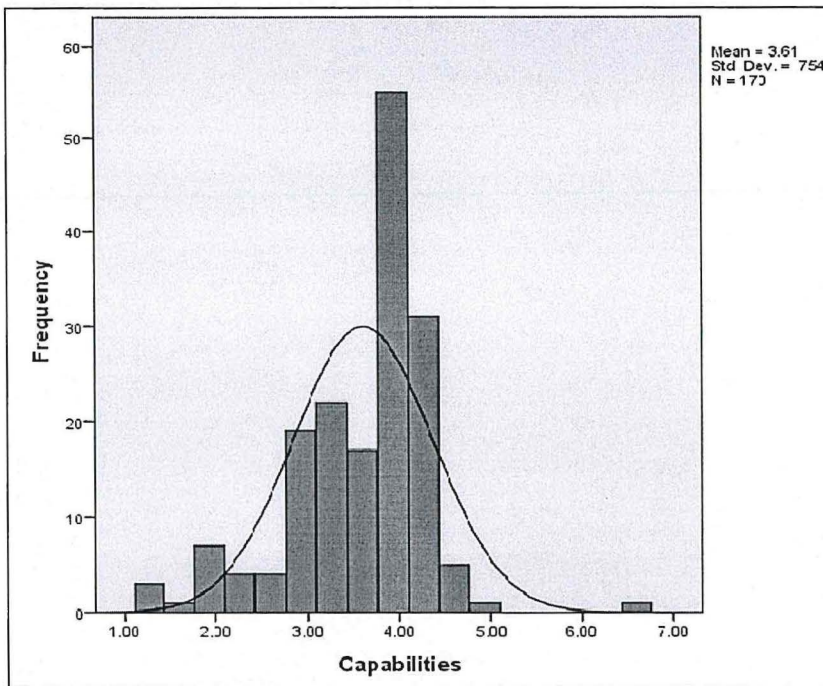


Figure 4.19:
Histogram for capabilities

Figure 4.19 show how teachers rated schools' capabilities to be high (mean = 3.61). The standard deviation = 0.754 meant that the results were normally distributed. Thus, the results on tangible resources were fit for analysis

4.4.3.5 Capabilities Structural Model. The structural model (Figure 4.20) shows presents the measures schools capabilities and their indicators. The measures are experimentation, capability integration and content management.

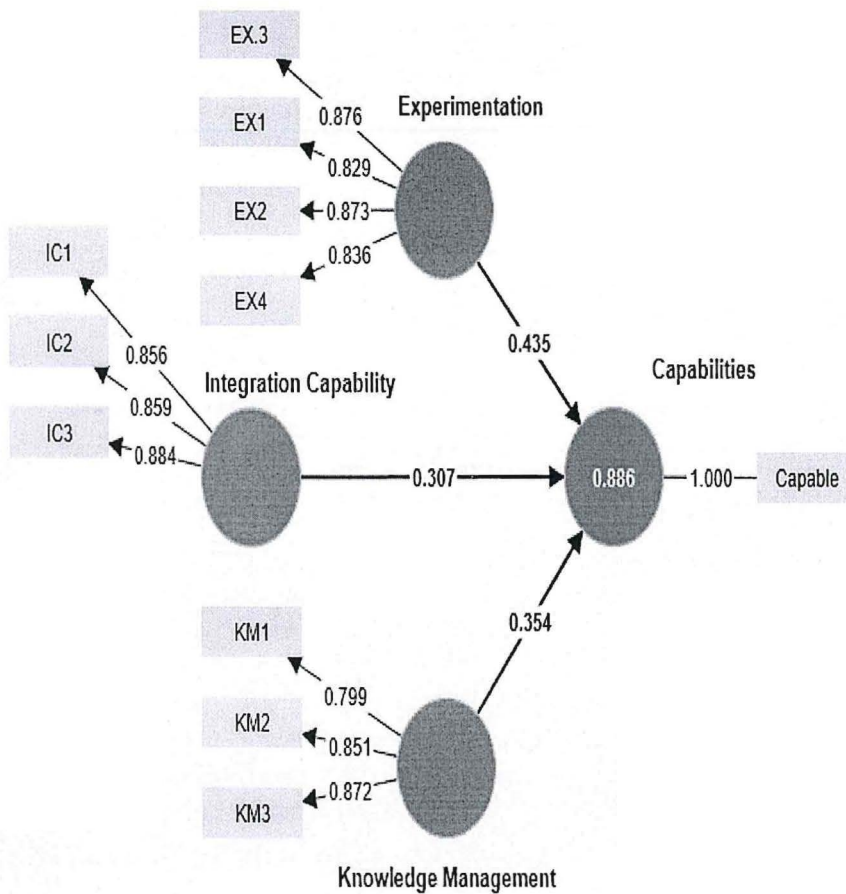


Figure 4.20:

Capabilities Structural Model

The structural model (Figure 4.20) for capabilities of teachers reveals that when utilizing factor analysis, four out of five indicators measuring the same variable loaded far over the minimum value of 0.50 for the construct of experimentation (Hair Jr et al., 2021). For integration capability three out of five indicators loaded highly and for knowledge management three out of four indicators loaded highly. As a result, the indicators maintained for the model's constructs measuring capabilities were suitable and valid assessments of those constructs.

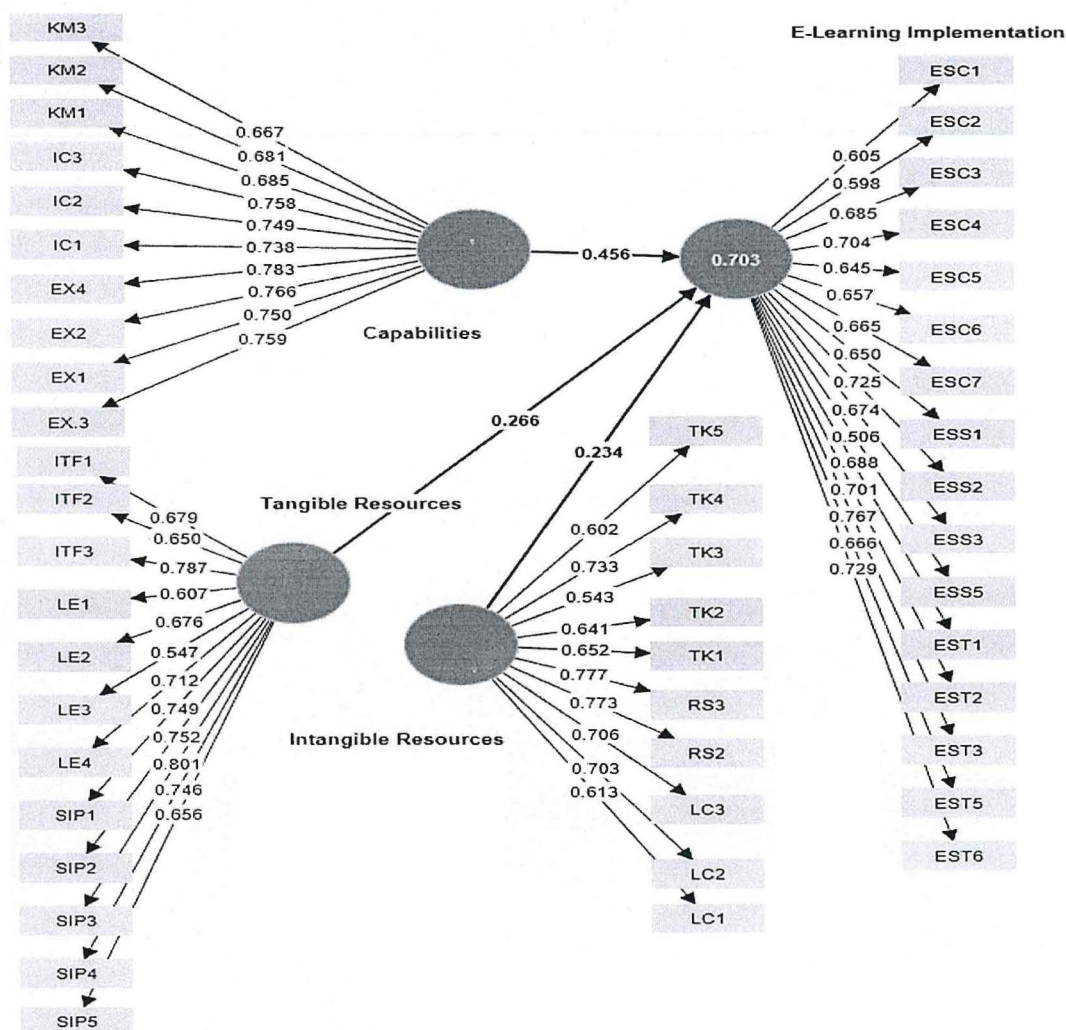


Figure 4.21:

School Resources and Effective Implementation of E-Learning

Figure 4.21 indicates that schools' resources were measured in terms of tangible resources, intangible resources and capabilities. Tangible resources were conceptualised in terms of ICT teaching facilities, school ICT policy and Library E-resources. The factor loadings show that for ICT teaching facilities, indicators 4 and 5 were dropped, for School ICT policy, all indicators were retained while for library e- resources indicator 5 (LE5) was dropped. The measure of

intangible resources was conceptualised in of technical knowhow, learning culture and relationship with stakeholders. For technical knowhow, all indicators (TK1 - 5) were retained, with learning culture, indicator four and five was dropped (LC4, 5), while for relationship with stakeholders, two indicators (RS 2, 3) were retained and the rest (RS 1, 4, 5) were dropped. The measure of capabilities was conceived in terms of experimentation, capability integration and content management. For experimentation, indicator (EX5) was dropped, for integration capability, indicators 4 and 5 were dropped (IC 4, IC5) while with knowledge management indicator 4 was dropped and the rest retained. For the dependent variable of e-learning implementation, it was studied in terms of student-student e-interaction, student-teacher e-interaction and student-teacher e-interaction. For student-student e-interaction, four indicators (ESS1, ESS2, ESS3, and ESS5) were retained and indicator (ESS4) was dropped. For student-content e-interaction (ESC), all the seven indicators were retained and for student-teacher e-interaction (EST 1, 2, 3, 5, 6) were retained, with indicator four (EST 4) dropped. The indicators that loaded significantly over the minimum value of 0.50 were those that were retained (Hair Jr et al., 2021) as illustrated in Figure 4.21.

Table 4.30:*Path Model for School Resources and Effective Implementation of E-Learning*

Path coefficients	β	Mean	Std	t	p
Tangible Resources -> E-Learning Implementation (H1)	0.266	0.270	0.074	3.612	0.000
Intangible Resources -> E-Learning Implementation (H2)	0.234	0.231	0.100	2.351	0.019
Capabilities -> E-Learning Implementation (H3)	0.456	0.460	0.089	5.129	0.000
Adjusted R-square = 0.703					

The results revealed that capabilities ($\beta = 0.456$, $t = 5.129$, $p = 0.000 < 0.05$), Intangible resources ($\beta = 0.234$, $t = 2.351$, $p = 0.019 < 0.05$) and tangible resources ($\beta = 0.266$, $t = 3.612$, $p = 0.000 < 0.05$) had a positive and significant influence on e- learning implementation. Therefore, hypotheses one (H1), two (H2) and three (H3) were supported. The Adjusted R^2 suggested that the significant factor namely school resources contributed 70.3% to effective e- learning implimentation. This means that coeffiient of determination suggested that 29.7% of variation in effective e- learning implimentation was accounted for by other factors than school resources.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion, conclusion and recommendations on school resources and effective implementation of e- learning in secondary schools in Kasese Municipality, Kasese District. The discussion involves cross-referencing of the findings of the study with earlier literature. Thus, drawing conclusions from the discussion and making recommendations based on the conclusions.

5.1 Discussion of the Findings

This section of the study presents the discussion of the study findings discussing the influence of school resources in relation to effective implementation of e-learning.

5.1.1 Schools' Tangible Resources and Effective Implementation of E-Learning. The first objective of the study examined the influence of schools' tangible resources and effective implementation of e-learning in secondary schools in Kasese Municipality. Therefore, from this objective, the hypothesis to the effect that schools' tangible resources have a significant influence on effective implementation of e-learning in secondary schools was derived. Hypothesis test results indicated that the hypothesis was supported. This finding is consistent with earlier scholars. For instance, Anene et al. (2014) found that infrastructure shortcomings were one of the barriers to ICT use. This means that existence of e-infrastructure influences e-learning implementation. In the same vein, Chiaha et al. (2013) reported that introduction of e-learning inside the school was delayed despite the presence of e-learning facilities by an unstable

power supply, a weak power network, and a lack of adequate skills. This means that availability of resources is linked to e-learning implementation.

Further, the finding of the study is consistent with Ismail et al. (2020) who found that using Moodle e-learning improved students' learning in a statistically significant way. Similarly, Alhabeeb and Rowley (2017) revealed that e-learning required technological infrastructure. Also, Zhang et al. (2017) revealed that tangible resources were strategic resources that enabled competitive actions and performance. Therefore, for secondary schools implementing e-learning, tangible resources are essential. Relatedly, Eze et al. (2018) established that tangible e-learning facilities were adequate and accessible to users with most teachers comfortable with utilisation of various facilities during classes hence influencing e-learning implementation. Likewise, Okoth and Machuki (2018) established that critical strategic tangible resources explained performance differentials. This meant that if a school has high level ICT facilities e-learning implementation will be superior.

Also, consistent with the finding of the study, Ibieta et al. (2017) indicated that library e-resources are necessary for classroom preparation for improved content delivery. Similarly, Mugizi and Amwine (2020) reported that electronic library resources had a positive and significant influence on job performance of teacher. In the same vein, Nwigbo and Madhu (2016) reported that access to e-resources enabled teachers to access data files during lesson preparations and research helping them to carry out effective teaching because of access to high quality resources. However, the finding was inconsistent with Atsumbe et al. (2012) who revealed that the available e-learning infrastructure was primarily intended for administrative usage. Hence schools' tangible resources did not influence e-learning implementation. Relatedly Chong et al. (2016) indicated that ICT facilities did not increase e-learning. Further, inconsistent

with the finding of the study, Jawed and Siddiqui (2019) established that tangible resources had a negative and insignificant role on the performance of organisations.

Further, Masood et al. (2019) reported that tangible resources had no impact on organisational performance. In the same vein, Rajchelt-Zublewicz et al. (2019) reported existence of a weak correlation between tangible resources with organisational performance. This meant that existence of tangible resources such as ICT facilities might not have an impact on e-learning implementation. However, it should be noted that the finding of the study was consistent with the findings of earlier scholars. Therefore, it can be deduced that schools' tangible resources influence e-learning implementation.

5.1.2 Schools' Intangible Resources and Effective Implementation of E-Learning. The second objective of the study assessed the influence of schools' intangible resources and effective implementation of e-learning in secondary schools in Kasese Municipality. The hypothesis developed from this objective was to the effect that there is a significant relationship between schools' intangible resources and effective implementation of e-learning. Hypothesis test results revealed that the hypothesis was accepted. This finding is consistent with earlier scholars. For instance, Adiyarta et al. (2018) established the existence of a connection between factors affecting human resources, technological proficiency, and content and the adoption of e-learning in institutions. This shows that the application of e-learning is related to the intangible component of technology knowledge. Further, Ghavifekr and Rosdy (2015) established that teacher ICT skills were one of the main factors for success of technology-based teaching and learning. This suggested that teacher's ICT know-how facilitates implementation of e-learning.

In relation to the above, Hatlevik and Hatlevik (2018) revealed a link between teachers' use of ICT in their instruction and interdepartmental cooperation. Therefore, the learning culture of teachers involving collegial collaboration related to ICT implementation. Consistent with the findings of the study, Ünal (2020) also established that collaborative learning culture was positively associated with the intention to use e-learning technologies for teaching. This suggests that the presence of an intangible learning culture of collaboration facilitates the deployment of e-learning. Similarly, Kamasak (2017) demonstrated that intangible resources had a higher effect on performance when compared to other resources. This means that intangible resources enhanced performance of schools such as implementation of e-learning compared.

Further, Mailizar and Fan (2020) found that to a large extent teacher had inadequate knowledge of ICT and ICT use in teaching which impeded use of ICT in teaching. This meant that inadequate technology know-how hindered implementation of e-learning. Also, in agreement with the findings of the study, Twinamasiko et al. (2021) revealed that skills were one of the main barriers to the implementation of e-learning. Thus, poor ICT skills impeded implementation of e-learning. Relatedly, Makokha and Mutisya (2016) in their study found that the use of computers and other technology by teachers to educate their pupils' information and skills was essential for e-learning. Therefore, technical know-how which is an element of intangible resource enhances implementation of e-learning. Further, Woreta et al. (2013) indicated that ICT knowledge had a strong and positive association with ICT utilisation. This indicates that technology know-how is imperative for implementation e-learning.

However, the finding of the study was inconsistent with Jawed and Siddiqui (2019) reported that intangible resources had a negative and insignificant role on the performance of organisations as implementation of e-learning. This suggested that depending on the context, the

relationship might not be definite. Nonetheless, with the finding of the study agreeing with those of earlier scholars, it can be affirmed that intangible resources influence e- learning.

5.1.3 Capabilities and Effective Implementation of E-Learning. The third objective examined the influence of schools' capabilities on effective implementation of e-learning in secondary schools in Kasese Municipality. Thus, the hypothesis was that schools' capabilities have a significant influence on effective implementation of e-learning and the results supported this hypothesis. This finding was in agreement with the findings of the earlier scholars such as Al-Ammary et al., (2016) who found that the effective implementation of e-learning was related to the level of the e-learning capability. This meant that for effective implementation of programmes such as e-learning, universities need to enhance ICT competences. Relatedly, Haukijärvi (2015) indicated that critical capabilities and resources had a direct link to digitalisation of learning and teaching. Therefore, enhancement of institutional capabilities is imperative for successful e-learning implementation.

Also, Koodziejczak and Roszak (2017) revealed a substantial correlation between ICT competences and the successful deployment of e-learning for distance education. This research suggests that teachers' competencies should be propagated to apply e-learning in secondary schools. Similarly, Martha et al. (2021) indicated that students from universities with a high level of competences of capabilities were more disciplined and had better schedules enhancing implementation of e-learning. Likewise, Khmour et al. (2014) demonstrated that content management supported e-learning in organizations. Therefore, institutions must acquire content management skills that can improve e-learning.

Further, according to Kusdibyo et al. (2019) indicated that ICT trialability (experimentation) had a favourable impact on the attitude toward e-learning. In a similar vein, Lang et al. (2017) found that experimenting improves the implementation of e-learning, with teachers learning from each other in the same way that students learn from each other while utilizing creativity and experimentation in student-led classroom environments. Also Costello and McNaughton (2018) indicated that integrating dynamic capabilities led to content alignment and integration enhancing implementation of e-learning. This suggests that to effectively implement e-learning, essential content should be integrated in the system.

In a study carried out in Spain, Vidal and Gómez (2015) also revealed that using ICT in team teaching seminars increased student enthusiasm by fostering interaction between students, students and teachers, and among students. In their study, Chaw and Tang (2018) established that learning content management had a significant relationship with learning effectiveness. This implies that learning content management leads to effective implementation of e-learning. Nonetheless, the results of this study did not agree with those of Mtebe and Raphael (2018), who claimed that learners' satisfaction with the e-learning system was not significantly impacted by either course quality or content management. However, the finding of the study concurred with the findings of most previous scholars, therefore, confirmed that Thus, the finding of this study was contrary to the findings of other scholars who indicated that learners' content management aspects related e-learning effectiveness. It can be surmised that schools' capabilities influence effective implementation of e-learning.

5.2 Conclusions

Given the above discussion, the study is prompted to make the following conclusions on the impact of school resources on effective e-learning implementation.

1. Tangible resources are essential for effective implementation of e-learning. This is so if the schools have ICT facilities, a school ICT policy and e-library resources. With ICT facilities the internet speed should be good, the internet is sufficient and their provision of opportunities to improve ICT knowledge. With respect to ICT policy, teachers need to know the administration technological endeavors, have guidelines for use of ICT, and uploading content. Concerning libraries e-resources, this is when the schools have online data bases, have access to diverse electronic resources, the online resources are easily accessible and the libraries have internet services.
2. Intangible resources are vital for effective implementation of e-learning. This is so if teachers use ICT based methodologies in developing teaching approaches, use ICT enabled teaching methods instead of traditional methods, involve learners in online surfing of learning materials and share assignments, notes and study material through ICT . With respect to learning culture, this is when teachers help each other in the use of ICT, head teachers ensure that ICT experts are given time to support learning, and ensure lessons learnt about e-teaching are availed to all teachers. Concerning relationship with the stakeholders, management of the school should ensure teachers and students' e- teaching demands are addressed, and management should frequently involve instructors and learners in learning matters.
3. Schools' capabilities are imperative for effective implementation of e-learning in secondary schools. This is so if teachers are availed with opportunities to try various ICT teaching

applications, have access to relevant applications and possess the ability to use ICT in teaching and learning. In addition, this when students are equipped with knowledge, skills, abilities and attitudes for technological change, teachers are able to use different ICT applications for effective teaching and to engage in curriculum activities. With respect to teaching content management, this is when teachers can capture categorize, store and retrieve teaching content, are able to maintain and upgrade teaching content, can retrieve teaching content in ICT and use saved information in the system of the school.

5.3 Recommendations

Drawing from the conclusions above, the study is promoted to make the following recommendations on the impact of school resources on effective e-learning implementation.

1. The Ministry of Education, directors of schools and head teachers should ensure that schools have sufficient tangible resources for e-learning in terms of ICT facilities, school ICT policies and e-library resources. With ICT facilities, they should ensure that internet speed should is good, the internet is sufficient and there is provision of opportunities to improve ICT knowledge. With respect to ICT policy, teachers should be made to know the school's technological endeavors, have guidelines for use of ICT, and uploading content. Concerning libraries e-resources, schools should have online data bases, access to diverse electronic resources, and libraries with internet services.
2. Directors, and head teachers should ensure schools have adequate intangible resources in terms of technology know how, learning culture and relationship with stakeholders. With respect to technology know how, they should ensure teachers use ICT based methodologies in developing teaching approaches, use ICT enabled teaching methods

instead of traditional methods, and involve learners in online surfing of learning materials, share assignments, notes and study material through ICT. With respect to learning culture, teachers should be able to help each other in the use of ICT, head teachers should ensure ICT experts are brought to support learning, and ensure lessons learnt about e-teaching are availed to all teachers. Concerning relationship with the stakeholders, management of the school should ensure teachers and students e-teaching demands are addressed, and frequently engage teachers and students with respect to e-teaching.

3. Directors and head teachers should ensure schools have adequate capabilities in terms of experimentation, integration capability and teaching content management. With experimentation, head teachers should ensure that teachers are availed with opportunities to try various ICT teaching applications, have access to relevant applications and are able to make use of ICT in teaching and learning. In relation to integration capability, teachers and students must be equipped with knowledge, skills, abilities and attitudes for technological change, teachers should be able to use different ICT applications for effective teaching and to engage in curriculum activities. With respect to teaching content management, teachers should be supported to have capacity to capture categorize, store and retrieve teaching content, and maintain and upgrade teaching content, retrieve teaching content in ICT and use saved information in the system of the school.

5.4 Limitations and Areas for further Research

Important contribution has been made with respect to the study of school resources and effective implementation of e-learning. However, the study's findings were based solely on data from

secondary schools. This means that the generalisation of the research findings to more institutions should be considered with care. This suggests that, future studies should make effort to carry out similar or related studies in different institutions such as universities and other tertiary institutions. Further, the study used a quantitative research approach which might have limited in-depth analysis of school resources and e-learning implementation. Future research should therefore use a mixed-methods approach, combining both quantitative and qualitative methods for in-depth examination. This makes it necessary for future researchers to further examine the influence between these HRMPs practices in more universities and other organisations in Uganda to confirm or disconfirm the findings of this study. In addition, this study was carried out in one public university. Therefore, future researchers should extend the study to more universities, including private ones.

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APPENDICES

APPENDIX A: INTRODUCTORY LETTER



Department of Educational Planning and Management

Date: 20th March, 2023

TO WHOM IT MAY CONCERN

Dear Sir/Madam

RE: TOLIA KARABA KYOMUHEENDO- 19/U/OMED/18683/PD

This is to certify that Tolia Karaba Kyomuheendo- 19/U/OMED/18683/PD is a student in our department pursuing a Master of Education in Policy Planning and Management. She is carrying out research as one of the requirements of the course. She requires data and any other information on the topic titled:

"School resources and effective implementation of e-learning in Secondary Schools in Kasere Municipality, Uganda"

Any assistance accorded to her is highly welcome. She is strictly under instructions to use the data and any other information gathered for research purposes only

Thank you.

Assoc. Prof. George Wilson Karule

HEAD OF DEPARTMENT

APPENDIX B: SELF-ADMINISTERED QUESTIONNAIRE FOR TEACHERS IN THE SELECTED SECONDARY SCHOOLS

Dear respondent,

This questionnaire seeks to collect data on a study about “school resources” and effective implementation of e-learning in secondary schools in Kasese Municipality, Kasese District.” The findings of this study will be published in a research report. You are requested to participate in the study by providing your responses to the question items for the success of the study. All information provided will be treated with utmost confidentiality.

Thank you Very Much for very much for participating in this study.

Section A: Background ground characteristics

Instructions: On the alternatives provided, tick on the choice you consider appropriate for you.

A1. Sex

- a) Male b) Female

A2. Age group

- a) Up to 30 years b) Below 40 years c) 40 years and above

A3. Highest level of education attained

- a) Diploma b) Bachelors c) Post graduate diploma d) Master’s degree
e) Others specify

A4. Position in your current school

1. Teacher 2. Class teacher 3. Head of department 4. Club Patron

Section C: Implementation of E-learning (DV)

This section presents items on effective implementation of e- learning covering the three aspects of student-student interaction, student-teacher interaction, and student resources interaction. Kindly you are requested to provide your responses to the question items on the same using the scale where, 1 = Strongly Disagree, 2 = Disagree, 3 = Not sure, 4 = Agree and 5 = Strongly Agree.

ESS	Student-Student E-Interaction	SD	D	U	A	SA
		1	2	3	4	5
ESS1	Students are able to learn from reading other students' comments posted online platforms					
ESS2	Comments and questions from other students help students to learn easily					
ESS3	Students have developed effective electronic communication skills through online interaction					
ESS4	Interacting with online increases students learning motivation					
ESS5	Should enjoy working in collaborative in online activities					
EST	Student-Teacher E-Interaction	SD	D	U	A	SA
		1	2	3	4	5
EST1	Students ask questions during online lessons					
EST2	I am able to make students share ideas during online classes					
EST3	I am able to use all kinds of interesting materials in online classes					
EST4	Involve students in the learning process during online lessons					
EST5	I am able to explain content to students sufficiently when teaching online					
EST6	I allow students to speak up to share ideas during online classes					
ESC	Student-Content E-Interaction	SD	D	U	A	SA
		1	2	3	4	5
ESC1	Students can easily and simply use online learning					
ESC2	Students can access and simply search the system's resources					
ESC3	Students can quickly locate course information within the system					
ESC4	Students can easily and simply use online learning					
ESC5	E-learning provides students the opportunity of practicing what they learn in the lesson					
ESC6	E-learning materials stimulate students' interest in learning					
ESC7	The online materials in the subject I teach support student learning					

Section C: RBV Approach (IV)

This section presents items on RBV Approach covering the three aspects of tangible resources, intangible resources, and capabilities. Kindly you are requested to provide your responses to the question items on the same using the scale where, 1 = Strongly Disagree, 2 = Disagree, 3 = Not sure, 4 = Agree and 5 = Strongly Agree.

Tangible Resources (IV2)

ITF	ICTs Teaching Facilities	SD	D	U	A	SA
		1	2	3	4	5
ITF.1	Internet speed at the school is good					
ITF.2	The school provides sufficient internet					
ITF.3	This school provides me sufficient opportunities to improve my technology knowledge					
ITF.4	Computer rooms or laboratories lighting, air condition and arrangement are suitable for instruction in this school					
ITF.5	The computers of the school have sufficient licensed software programs such as zoom, google classroom or any other					
ITF.6	Learning materials can be easily downloaded for personal use					
UIP	School ICT Policy	SD	D	U	A	SA
		1	2	3	4	5
UIP.1	Teachers are informed about the administration's prospective technological endeavours					
UIP.2	The school has established guidelines for use of ICT in teaching and learning					
UIP.3	The school has a policy in place focused on ICT implementation in teaching and learning system					
UIP.4	The school ICT policy provides possibilities for use of ICT in teaching and learning					
UIP.5	The school has guidelines for curriculum content uploading or delivery					
LE	Libraries E-resources	SD	D	U	A	SA
		1	2	3	4	5
LE.1	The school has online databases					
LE.2	Can access diverse electronic resources using the school portal					
LE.3	The school library e-resources interface makes it easy to access e-journals					
LE.4	The library has facilities for using internet services					
LE.5	The school online sources have sufficient resources					

Intangible Resources (IV2)

TK	Technology know-how	SD	D	U	A	SA
		1	2	3	4	5
TK.1	ICT based methodologies are very supportive in developing teaching approaches					
TK.2	ICT resources for teaching and learning increase my productivity and effectiveness					
TK.3	ICT enabled teaching is better than traditional methods of teaching					
TK.4	Online surfing of learning material makes my students more effective day by day					
TK.5	It is convenient to share assignments, notes and study material through ICT					
LC	Learning culture	SD	D	U	A	SA
		1	2	3	4	5
LC.1	In this school, teachers help each other in use of ICT					
LC.2	In this school, expert staff in ICT have been given time to support learning					
LC.3	In this school lessons learned about e-teaching have been made available to all teachers					
LC.4	In this school, teachers have been given control over the resources they need to accomplish their activities					
LC.5	In this school, teachers have been mentored and coached in the use of ICT					
RS	Relationship with the stakeholders	SD	D	U	A	SA
		1	2	3	4	5
RS.1	The school has partnerships that can help it in implementation of e-learning					
RS.2	Management of the school has addressed e-teaching demands of teachers and students					
RS.3	The school management frequently engages teachers and students with respect to e-teaching					
RS.4	The school takes time to assess key requirements of teachers and students for e-teaching					
RS.5	The school has prepared information for teachers and students on e-teaching and learning					

Capabilities (IV3)

EX	Experimentation	SD	D	U	A	SA
		1	2	3	4	5
EX.1	I have had a great opportunity to try various ICT teaching applications					
EX.2	I have access to and try ICT teaching relevant applications					
EX.3	I have had the opportunity to try out how I can make use of ICT in teaching and learning					
EX.4	Being able to try out ICT in teaching was important in my decision to use it.					
EX.5	I decided to adopt ICT in learning after I carried out a pilot test					
IC	Integration capability	SD	D	U	A	SA
		1	2	3	4	5
IC.1	My students are prepared to deal with on-going technological change given their knowledge, talents, skills, and attitudes					
IC.2	I have used different ICT application to teach effectively					
IC.3	Using ICT applications, I have been able to engage in sustained involvement with curriculum activities					
IC.4	Using ICT I have supported elements of the learning process					
IC.5	I have undertaken formative and/or summative assessment using ICT					
IC.6	With ICT learners have been able to engage in independent learning through access to education at a time, place and pace of their own choosing					
KM	Teaching Content Management	SD	D	U	A	SA
		1	2	3	4	5
KM.1	I use ICT technologies to capture and store teaching content					
KM.2	ICT technologies facilitate the processes of capturing, categorising, storing, and retrieving teaching content					
KM.3	I maintain and constantly upgrade content stored in the system					
KM.4	When I need some teaching content, I know where to get it in the ICT system					
KM.5	I access and use information and knowledge saved in the system of the school					

Thank you for accepting to participate in this study

APPENDIX C: PLAGIARISM TEST REPORT

School Resources and Effective Implementation of E-Learning in Secondary Schools in Kasese Municipality, Uganda

by Karaha Tobia Kyomuhendo

Submission date: 19-Oct-2023 03:39AM (UTC+0100)
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