ASSESSMENT OF THE FACTORS INFLUENCING RENEAL E-LEARNING SYSTEM USAGE IN GOVERNMENT SECONDARY SCHOOLS IN ARUSHA DISTRICT.

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Masters of Information Security of the Institute of Accountancy Arusha.

OCTOBER, 2022

DECLARATION

I, Erick Macky, declare that this dissertation is my original work and that it has not been presented and will not be presented to any University/In for a similar or any other degree award.

Signature …….

Date …….

CERTIFICATION

I, the undersigned certify that I have read and hereby recommend for acceptance by the Institute of Accountancy Arusha the dissertation entitled: “Assessment of factors influencing Reneal e-learning system usage in government secondary schools in Arusha District” in fulfillment of the requirements for the Master’s degree in Information Security offered at the Institute of Accountancy Arusha.

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(Supervisor Name)

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(Supervisor Signature)

Date…….

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ABSTRACT

This study was undertaken to assess the factors influencing e-learning usage in government secondary schools in Arusha District. The research adopted inferential statistics and multiple regression models for data analysis using the SPSS computer program. The sample size was 243 respondents. Data were collected using questionnaires and interviews. Results from multiple regression analysis showed that the relationships between the model were strong but significant presented by Adjusted R-square 0.821 (82.1%). More results indicated that factors that can influence the usage of the Reneal e-learning system are not well addressed in most of the secondary schools found in the Arusha District. The study, on the other hand, revealed that the unavailability of ICT teachers is another hindrance to the e-learning system in the study area. Furthermore, the study revealed that the degree of teachers using the e-learning system was low. This implies that the usage of the Reneal e-learning system in the study area was very low. The study concluded that, despite of few barriers which have been discussed, the research findings have shown that, the usage of e-learning system in secondary schools is significant as it saves time and manpower. In the study area, it has been found that e-learning is not widely used in public secondary schools. Therefore, it was recommended that; the Ministry of Education and Vocational Training should emphasize employing more ICT teachers in public secondary schools. Schools should invest in establishing computer laboratories with their computers connected to the Internet. Policymakers should make sure that policies related to education must openly indicate how e-learning should be adopted and used in secondary schools.

Keywords: Arusha District, Government Secondary Schools, e-learning system usage, Reneal e-learning, Reneal International Education Outreach.

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LIST OF ABBREVIATIONS

BIOS	Basic input/output system
D&M	DeLone & McLean
E-learning	Electronic Learning
ICT	Information Communication Technology
LMS	Learning Management System
MoEVT	Ministry of Education and Vocational Training

LIST OF GRAPHS AND TABLES

CHAPTER ONE

INTRODUCTION

1.0 Introduction

E-learning is a formalized teaching-based learning system that makes use of electronic resources. E-learning is primarily based on using computers and the Internet, while teaching can also occur in or outside formal classroom settings. The delivery of education to many recipients at once or at different times is known as e-learning, which is also known as a network-enabled transfer of skills and knowledge. Earlier, it wasn't fully recognized because it was thought that this method lacked the human component necessary for learning.

However, given how quickly technology and educational methods have developed, the majority now embrace them. Computers were the catalyst for this transformation, and as time goes on and we grow more reliant on smartphones, tablets, etc., these technological advancements are now integral to classroom learning.

1.1 Background of the Study

A systematic teaching-based learning method called "e-learning" uses electronic resources. E-learning is primarily based on using computers and the Internet, while teaching can also occur in or outside formal classroom settings (economic times). The delivery of education to many recipients at once or at different times is known as e-learning, which is also known as a network-enabled transfer of skills and knowledge. It wasn't properly acknowledged earlier because it was believed that this method lacked the human element required for learning. However, the majority now embraces it due to how swiftly technology and educational approaches have grown. This change

was sparked by computers, and as time goes on and we become more dependent on smartphones, tablets, etc., these technological developments have become essential to classroom instruction.

According to studies, governments must play a significant part in closing the digital gap. Government measures, even in wealthy nations, are more likely to address the root causes of inequality than handing out computers to low-income families or funding rural Internet access (Ono & Zavodny, 2007). Governments have an even more important role in developing nations, particularly when it comes to promoting ICT dissemination in these regions. According to Shih et al. (2008), government financing and spending for ICT projects should be increased because the spread of ICT in developing nations is closely related to those investments.

The use of e-learning at all educational levels helped to make sure that the lectures were quickly and thoroughly understood by the pupils. Tutors can earn a great living by teaching from anywhere at their convenient time. The scalability of the learning, the course's content, and its duration may all be measured. It can be helpful for those who feel anxious and disconnected in social situations. It facilitates learning while maintaining environmental conveniences. To give teachers a greater degree of coverage to offer the curriculum regularly, e-learning places a high value on consistency of exposure, inputs, results, and coordination. This guarantees continuity in learning (digital class world).

According to Volman et al. (2001) and de Corte et al. (2003), the proper use of ICT may revolutionize the learning and teaching process and create powerful learning environments that enable students to engage with knowledge in an active, self-directed, and productive manner. Students' teamwork, communication, problem-solving, and lifelong learning skills should be developed via ICTs.

The extent to which organizational resources and support are put in place for the adoption of technology systems is explained by facilitating conditions (Bervell & Umar, 2017). Tutors' perceptions of organizational resources and support for the use of LMS to carry out blended learning initiatives in remote education are what we refer to as enabling conditions in this context. This indicates that support accessibility and availability should be a standard before the actual implementation of novel technology for organizational activity (Bervell & Arkorful, 2020 & Kamaghe et al., 2020).

Teachers' comprehension of e-learning can also have an impact on the adoption of the technology since they can create numerous interpretations about it through their interactions with others and their past experiences, which can ultimately affect how they feel about it (Ajzen & Fishbein 1980 & Fazio 2007).

It has been noted that additional computers and computer teachers are needed. Both alternative energy sources and Internet access in the classrooms are necessary. Also, the value of providing schools with adequate funding so they may effectively utilize their computer resources (Sedoyeka, E., & Gafufen, G., 2013).

In addition to the aforementioned difficulties, dealing with people can provide a variety of difficulties. For instance, school administrators may decide not to work together for personal, ideological, financial, or other reasons. The school schedule is greatly influenced by heads of schools (Sedoyeka, E., & Gafufen, G. 2013).

The adoption of e-learning has also been highlighted as being hindered by teachers' aversion to change (Rolfe et al., 2008; Glen 2008; Mnyanyi et al., 2010; Garrison 2011; Nihuka & Voogt 2012). It is referred to as a culture of resistance by Rolfe et al. (2008), where teachers habituated to

conventional approaches of instruction refuse to adapt. Despite having access to newer technologies, teachers are hesitant to convert their courses to an electronic format and occasionally prefer the traditional approaches (Nihuka & Voogt 2012).

Open educational resources (OER), which have recently gained popularity, can greatly aid Tanzanian schools in offering high-quality learning materials. These are freely and publicly accessible digital materials that can be used for research, education, and other purposes (OECD, 2007).

Learning management systems (LMS) that are publicly available are thought to be crucial instruments for improving e-learning in higher education. These systems allow students to use communication tools throughout their learning activities and access course materials without being constrained by time or location, which improves their academic performance and productivity (Fidani & Idrizi, 2012).

ICT creates a more favorable environment than ever before for developing countries to compete with developed ones. Tanzania must use ICT in education to improve basic education access, fairness, quality, and relevance while promoting and enhancing problem-based learning, experiential learning, and lifelong learning. ICT technologies could play a significant part in reforming the learning-instruction processes in a way that can help determine students' academic achievement provided they are correctly taught and used, as is well known (A Barakabitze et al, 2015).

The majority of e-learning systems were initially set up in institutes of higher learning. In recent years, secondary schools have started to use most of these methods more frequently. Some effective examples of e-learning systems used in secondary schools in Tanzania include the Tans-

eL system (Kalinga, Bagile, & Trojer, 2006), Retooling system (Mtebe, Kibga, Mwambela, & Kissaka, 2015), Christian Social Services Commission system (CSSC, 2014), and Brain share system (Mtebe & Kissaka, 2015). (Mwakisole, Kissaka, & Mtebe, 2018).

It is crucial to make sure that both teachers and students use these systems because high usage yields the best results (Bervell & Umar, 2018). This means that the rising adoption and use of e-learning systems are significant evidence that the systems are bringing about the anticipated benefits (DeLone & McLean, 2003). Similarly, to this, falling utilization is a crucial sign that the expected benefits are not materializing (Seddon, 1997). Usability and user experience (UX) issues are one factor highlighted in various studies for the low adoption and underuse of these systems in sub-Saharan African institutions (Ssekakubo et al., 2011; Mabila et al., 2014 & Mtebe, 2015).

The performance of students in courses delivered via the LMS and the use of learning management systems are related, according to studies. At the University of Patras in Greece, Filippidi, Tselios, and Komis (2010) investigated the effects of Moodle usage on students' academic achievement. The use of the LMS was found to have a favorable significant impact on student's performance, accounting for 20.2% of the variance in their overall grade. These results support a different study from Ewha Woman's University researchers Jo, Kim, and Yoon (2014). Researchers discovered that learners' performance in courses taken through an LMS was strongly correlated with how frequently the LMS was used.

Additionally, studies link the use of LMS to student happiness (Naveh et al. 2012). Student satisfaction with courses rises as LMS usage grows. Similarly, to this, satisfied students tend to complain less and are more likely to enroll in additional courses (Tarigan, 2011). Palmer and Holt (2009) found a strong link between satisfaction and the caliber of learning outcomes.

1.2 Statement of the Problem

The adoption of Reneal e-learning system in secondary schools has been facilitated widely in different areas around the world. For a country like Tanzania which is in the process of shaping its curriculum to match the world development demands, e-learning is also a top priority of curriculum improvement.

While some government secondary schools have been lucky to be granted laptops for e-learning purposes through different NGOs and entities, the low usage of the Reneal e-learning system amongst some schools remains a significant challenge to its success. Another difficulty is a lack of organizational (school) support, which contributes to the limited adoption of Reneal e-learning systems across African schools and institutions (Lwoga, 2012; Ssekakubo et al., 2011; Tedre et al., 2010 & Unwin et al., 2010).

Although there are few computer teachers in government secondary schools, the school and available teachers can create a plan to facilitate students to use the Reneal e-learning system in their labs. Different teachers who have been volunteering on teaching and facilitate Reneal e-learning in secondary schools have been using different methods to ensure their students learn through e-learning systems implemented in their schools.

As the facilitation of students to use e-learning system differ from teacher to teacher and school to school, this study tries to learn the behavior of each school and teacher in using these resources.

How many teachers are involved in Reneal e-learning in the process of usage? What approach do the teachers and schools use to make accomplish such tasks? The high-performing schools will provide a way to help low-performing schools.

1.3 Research Objectives

1.3.1 General objective

The general objective of the study was to assess the factors influencing Reneal e-learning system usage in government secondary schools in Arusha District.

1.3.2 Specific objectives

1. To examine factors that influence the usage of Reneal e-learning system in secondary schools in Arusha District
2. To ascertain the degree to which teachers use Reneal e-learning
3. To examine when students usually access the Reneal e-learning system

1.3.3 Research questions

1. What factors influence the usage of Reneal e-learning system?
2. How much Reneal e-learning system is used by teachers?
3. What time of the day do students engage in using Reneal e-learning system?

1.4 Scope of the study

The study was conducted in the United Republic of Tanzania in Arusha District to assess factors influencing Reneal e-learning system usage of in government secondary schools in Arusha District. The study collected information of the web browser history of the Reneal's e-learning system which uses Firefox web browser application as its main tool for accessing the learning material. It also checked the influence of the teachers and school in facilitating the usage of the Reneal's e-learning.

1.5 Limitation of study

There were several ways in which the researcher was constrained in this investigation. First, the researcher had trouble reaching respondents on time since they were preoccupied with their

everyday obligations. To overcome this limitation, the researcher made appointment with respondents and agreed on the suitable day for data collection.

The study used web browser data collection technique to primary collect the URLs visited by students. To ensure that people are assessed fairly and treated equally, the issues of security, privacy, and individuality of data have to be respected and maintained, much like with many other browser data gathering techniques (van Wel & Royakkers, 2004). By making sure that the discovered characteristics that could identify users were eliminated, the extracted data in this study were processed discreetly. Personal user profiles and other personal information were excluded. Moreover, the researcher was limited by the shortage of fund to cover costs like transport, printing, Internet and other logistics because he is self-sponsored.

1.6 Significance of study

The study's findings were noteworthy in a variety of ways. First, the study determines the usage of Reneal e-learning system in different secondary schools in Arusha District. Second the study identified if the teachers participate in using Reneal e-learning for teaching. Thirdly the study learned at what time the students mostly use Reneal e-learning. Fourthly the study showed the ways which improved Reneal e-learning environments among teachers and schools as well as students.

1.7 Organization of Study

There are five chapters in the dissertation. The dilemma that underlies the study and its environment is revealed in Chapter 1. It explains why the study is justified. The review of pertinent literature, synthesis, and research gaps are presented in Chapter 2 of the study. The study approach, methods for gathering and analyzing data, a budget, and a work plan are all described in chapter three. The research results and discussion of the findings are presented in chapter four. Chapter five provides the conclusion, recommendations and suggested areas for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of the literature related to the assessment of factors influencing Reneal e-learning system usage in government secondary schools in Arusha. The chapter includes the definition of concepts, theoretical literature review, empirical review, conceptual framework and research gap.

2.1 Definition of Concepts

2.1.1 Reneal e-learning System

Reneal International Education Outreach works to equip government secondary schools with low-cost, low-maintenance, high-reliability computer labs for students. Reneal's system uses Ubuntu, Open-Source Software, and extensive offline educational content. Custom software provides a user-friendly interface, system administration tools tailored for schools, built-in diagnostics and troubleshooting, and seamless integration (Reneal Labs Tanzania).

Reneal lab uses something called a "client-server" approach. In this approach, all of the programs and files are stored on a single power computer (the "server"). There is nothing stored on the other computers (called "clients") that are used by the students; in fact, most of the client computers do not have a hard disk. When the client computers are started, they do not use the hard disk to "boot" to an operating system. Instead, they do something called a "network boot", where they wait for communication from their network interface from the server computer. Having a client do a "network boot" can be done by changing settings in the client's BIOS. The way to do this depends on the manufacturer of the computer, but it is usually not difficult to set up.

Because the clients rely on the server, there must be a way for them to be connected to the server. This is done with an Ethernet network cable that is connected to the local area network (LAN) connector on each client. That cable is then connected to a gigabit network switch. The network switch is then connected to the server. In this way, the clients can each communicate with the server, through the network switch (Reneal Labs Tanzania).

The Epoptes computer lab management software for teachers is also included with the Reneal system. Epoptes give teachers the ability to keep an eye on every student's screen, control one or more screens, share their screen, send messages to one or more students, and more. A teacher can share a video with one or more pupils using the customized Video Streamer/Video Viewer tool in the computer lab. If a school's computer lab lacks a video projector, both of these programs are quite useful (Reneal IEO Computer System Summary, 2021).

If the school has Internet access, it is connected directly to the network connection on the server's motherboard. Because the server receives Internet traffic directly, it can perform crucial tasks like network filtering and block automatically. The fact that all files and programs stored on the server are available from any client is one of the advantages of the client-server model. A student or teacher can access their files while working on one client one day and another client the next. (Reneal IEO Computer System Summary, 2021).

2.1.2 Reneal e-learning Usage

This is the consumption of the Reneal e-learning system: how much the students and teachers use the system for different learning activities. The active computer has someone signed in with a user account and it is being actively used (no screen saver). User-Hours means the total of hours of use by all active users – this is calculated by adding up the number of active users multiplied by the

number of hours that many active users were logged on. It is determined separately for students and teachers.

In the client-server approach, most of the programs are running on the powerful server computer. Because most schools served by Reneal do not have Internet, a significant amount of space in the server is devoted to offline educational resources. These are also free and legal. Many can be downloaded onto a teacher's flash drive for use outside of the computer lab. These resources are available via a web browser, giving an Internet-like experience for the students even though everything is stored on the server with no Internet connection required. Educational content can easily be added to existing servers as new resources are discovered.

The application and database also keep track of how much time instructors and students spend utilizing the lab's clients. These indicators offer insight into opportunities and impediments as well as project success or failure. Making investment decisions is made much easier with the help of analytics, especially when deciding which labs should get more equipment (Reneal IEO Computer System Summary, 2021).

Due to the computers Reneal installed in their schools, secondary school students in the Arusha District spent about 91,000 hours on computers in the 2021 academic year. With approximately 15,000 hours of teacher computer use within the same period, the teachers at these schools also profited (Reneal IEO Computer System Summary, 2021).

2.2 Theoretical Literature Review

This study was guided by Jill W. Fresen Adapted Model.

2.2.1 The Jill W. Fresen Adapted Model

Jill W. Fresen (2011) developed a taxonomy of characteristics that assist high-quality web-supported learning and proposed elements impacting lecture uptake of e-learning.

The study led to the development of a preliminary taxonomy of elements that affect the quality of web-supported learning, based on six categories: institutional, technological, lecturer, student, instructional design, and pedagogical aspects. University of Pretoria case study participants reviewed and improved the initial taxonomy for triangulation and verification.

However, in this study, we want to measure the use dimension. The success dimension (intention to) use represents the degree and manner in which an Information System is utilized by its users. An information system's utilization measurement is a wide term that can be seen from a variety of angles.

2.3 Empirical literature review

2.3.1 Teachers' factors influencing e-learning Usage

From the Jill W. Fresen, (2011) study, effective use of appropriate media should be viewed as a component of the growth of one's own and one's teaching abilities. But the research shows that there are still several obstacles in the way of academics using learning technology as a matter of course in their work. According to her research, the following teacher qualities are required to facilitate web-supported learning: interaction/facilitation, frequent feedback, and academic background, assessment of teaching ability, community, and empathy.

The study also identified numerous teacher-related barriers to the rapid adoption of technology in education, such as Academic staff has not received training on how to integrate technology into

their instruction; Traditional teaching methods being resistant to change; Lack of technological application knowledge.

Elementary school teachers' behavioral intention to continue utilizing online learning was not significantly predicted by effort expectancy, in which the degree of ease is connected with using e-learning. The results are in line with those of Sangeeta et al. (2020), who discovered that teachers' desire to continue using e-learning is not significantly correlated with effort expectancy.

The characteristics of the teachers for e-learning criteria, according to Ammar Y. Alqahtani et al. (2020), place a strong emphasis on the surroundings in which the instructors teach. It encompasses the instructor's disposition, adaptability, familiarity with educational technologies, teaching style, and effectiveness in motivating students.

This goes beyond the students and provides flexibility for the teachers as well. Additionally, educational institutions are integrating E-learning technology to build the learning community and enhance communication between students and teachers for better knowledge exchange as well as to achieve individual goals.

Students reported e-learner satisfaction with e-learning will be positively influenced by instructor views toward e-learning. The timeliness of the instructor's responses, how they educate, and their assistance to students using the e-learning platform are all considered indicators of the instructor's quality (Cheng, 2012). According to earlier research, the perceived effectiveness of the e-learning system was significantly positively correlated with the instructor's attitude toward online learners (Cheng, 2012 & Lee et al., 2009). The definition of an e-learning course's flexibility is how well it works and what impact it has on learners' working, studying, and commute times.

Numerous attempts have been tried to comprehend the facilitators or exhibitors that affect a person's propensity to adopt and employ new technologies (Son & Han, 2011; Svendsen, Johnsen, Alms-Srensen, & Vitters, 2013; Nugroho & Fajar, 2017). According to Gombachika and Khangamwa, (2012), personality characteristics affect a user's propensity to adopt ICT readiness in schooling. The eagerness of a person to test out any new information technology is known as personal readiness (Nov & Ye, 2008). Four personal attribute constructs optimism, inventiveness, discomfort, and insecurity are presented through the construction of the Technology Readiness Index (TRI) suggested by Parasuraman, (2000). These assess whether or not people are prepared to employ new technologies (ICT tools) to accomplish their personal and professional goals.

2.3.2 School factors influencing e-learning Usage

According to the Fresen research, the following school elements are necessary to encourage web-supported learning: at the departmental, institutional, and system levels, there must be coordinated planning for technology and a high-level understanding of technology's function in administration.

It has been discovered that organizational support raises users' self-efficacy in utilizing different computer applications (Henry & Stone, 1995; Higgins & Compeau, 1995 & Zheng et al., 2018). In this situation, the school can raise instructors' system self-efficacy by offering assistance including training, facilities, and the creation of supportive policies that promote the use of the system. The institution might also hire qualified assistants, computer experts, and instructional designers to aid lecturers with both technical and pedagogical support (Zheng et al., 2018). One of the reasons why e-learning systems in several African colleges failed was a lack of organizational support (Lwoga, 2012; Ssekakubo et al., 2011; Tedre et al., 2010 & Unwin et al., 2010). As a result, it was crucial to consider organizational support as one of the variables that can affect teachers' system self-efficacy.

Institutions should pick instructors carefully because not all instructors are interested in teaching online (Yueh-Yang Chen & Dowming Yeh, 2014). Online education is different from classroom instruction. When choosing online instructors, professional expertise should not be the only factor considered. Students' attitudes and performance will be influenced by how they feel about using computers and networks to deliver education and training. Although the instructor's response time did not seem to be statistically significant, failing to react to students' requests or responding with arbitrary delays will not help students succeed. In an e-learning setting, students particularly those who work either full- or part-time jobs might be either too busy to keep track of response timeliness or more understanding of teachers' hectic schedules. However, pupils would undoubtedly benefit from prompt responses to their queries or requests.

A stakeholder's perception of how much adopting a certain system has improved his or her work performance, or the performance of their group or organization is called perceived usefulness (Seddon, 1997). Perceived utility in this study refers to how much students think using the e-learning system will enhance their learning abilities.

Additional obstacles to the adoption of e-learning in Africa include a lack of infrastructure (particularly connectivity, especially in rural areas), a lack of e-learning policies, the need for appropriate training and capacity development, a lack of relevant digital content, and the cost of implementation (Unwin et al, 2010). For e-learning to be successfully implemented in Africa, it is critical to comprehend these obstacles.

2.3.3 The degree to which teachers use Reneal e-learning

In Tanzania, the majority of government secondary schools still employ ICTs quite sparingly (Arghya et al., 2020). Basic ICT skills are only sometimes taught, and the teaching and learning process in the classroom is not integrated (Al-Gahtani, 2016). Tanzania's majority of public

secondary schools have subpar information and communication technology infrastructure. However, secondary schools have been the Ministry of Education and Vocational Training's (MoEVT) top priority for using ICT in education, followed by teachers' colleges (Dubé J-P et al., 2017). When student teachers graduate from institutions and enter the workforce as certified teachers and advocates for technology use, it is uncertain how they employ their ICT knowledge and expertise (Economides N, 2017). The main obstacles to using ICT for teaching and learning in the majority of African nations are a lack of funding, a lack of suitable gear and software, and Internet bandwidth restrictions (Eze S, et al., 2019). The adoption of ICT in secondary school is hindered by several other reasons. These include teachers' attitudes, pedagogy, skills, knowledge, and beliefs about ICT; the affordability and accessibility of technology; the lack of awareness of Government ICT4E policy; the lack of public community ICT facilities. Other hindrances also include political, corruption and economic factors, lack of effective leadership, work ethic and human capacity (Maduku DK, Mpinganjirab M & Duhca H, 2016). Other restrictions include the absence of Internet connections and multimedia classrooms that may provide students with online instructional tools (Napitupulu D, 2018).

Additionally, there is a scarcity of eBooks and ICT-savvy teachers (Andreas, 2012). There is currently no framework in place that addresses the ICT policy for basic education about the use of educational ICT tools in secondary school (Nguyen TH, 2015). As opposed to traditional teaching and learning currently being used in Tanzania, online educational resources, digital content and technologies are not sufficiently exploited (United Republic of Tanzania, 2008).

Tanzania views the use of educational ICT tools in secondary education as essential (Nuryyev G, 2020). According to the United Republic of Tanzania's 2013 report on basic education data, Tanzania has seen a growth in the number of secondary schools (19.2%) and student enrollment

(54.8%). In contrast, the teacher-to-student ratio in science and math classes likewise kept rising yearly. The most common serious issues affecting Tanzania's education system are a lack of science professors and textbooks. These, primarily Basic Mathematics and Science topics, are seen as having contributed to the poor performance in the Form Four (IV) final examinations (United Republic of Tanzania, 2013).

Due to these factors, the commitment of teachers to e-learning usage in public secondary schools is still very low. Efforts should be made purposively to broaden e-learning usage in the study area and Tanzania as a whole.

2.3.4 Time students usually access the Reneal e-learning system

Zafar A and Mustafa S, (2017) indicated that mentoring and learning are often done by students using the PC as a technology-facilitated learning process using digitally transported content, and coaching support. Therefore, students require enough time for e-learning to become fruitful in all academic institutions including secondary schools. Institutions should avoid the allocation of little time for e-learning and provide much time for face-to-face teaching strategies.

According to P.R. Newswire, (2019), e-learning is a dynamic method that enhances self-study, ongoing testing, and assessments, prompting a real review of educational development and patchy success. According to a literature review, e-learning has a positive impact on students' achievements. This technological method helps students develop their innovative thinking (Eze et al., 2018). E-learning has many advantages for organizations, facilitators, and instructors, including time savings, aiding in institution image projection, encouraging staff knowledge advancement, enhancing the efficiency of teaching and learning, and promoting adaption. Therefore e-learning should not be limited by time (Eze et al., 2018).

Okundaye, Fan, and Dwyer (2019) argue that e-learning has evolved from traditional methods of instruction to a modern, synergistic, tailored, and adaptive approach that involves instructors, facilitators, and learners (Falana, 2017). While the learner focus is placed on technology that helps learners distribute and obtain content regularly and constantly, the traditional style of learning was thought to be teacher-focused. E-learning enables students and teachers to exchange learning materials created in a consistent framework and covers fundamental and synergistic PC-supported scholarship process and assessment methodologies that use cutting-edge approaches and applications to promote teaching and research (Eze et al., 2018). Regardless of the amount of time available, e-learning is an essential method that every institution should incorporate into the current learning and education technique for both students and community-oriented learning (Prause M, 2019).

According to Nwokolo S.A. (2017), there exist connections between educational initiatives and ICT. Through a presentation, the use of information-using tools, the use of instructional modules, and the use of online encyclopedias and electronic diaries, technology can affect learning. But in industrialized nations, where many institutions view e-learning activities as a way to expand and enhance their institutions, e-learning has seen widespread adoption as a teaching tool. Additionally, it's concerning to see how teaching techniques are evolving in the twenty-first century. The development of the Internet and the incorporation of technologies as a way of life have also altered how teaching is done in HEIs, particularly in developed nations. Today, blended learning techniques—which combine traditional face-to-face learning with e-learning—have gained popularity. The time that teachers and students can use for e-learning strategy and traditional face-to-face learning strategy, should be equal. All techniques require sufficient time for better academic outcomes.

2.4 Knowledge Gap

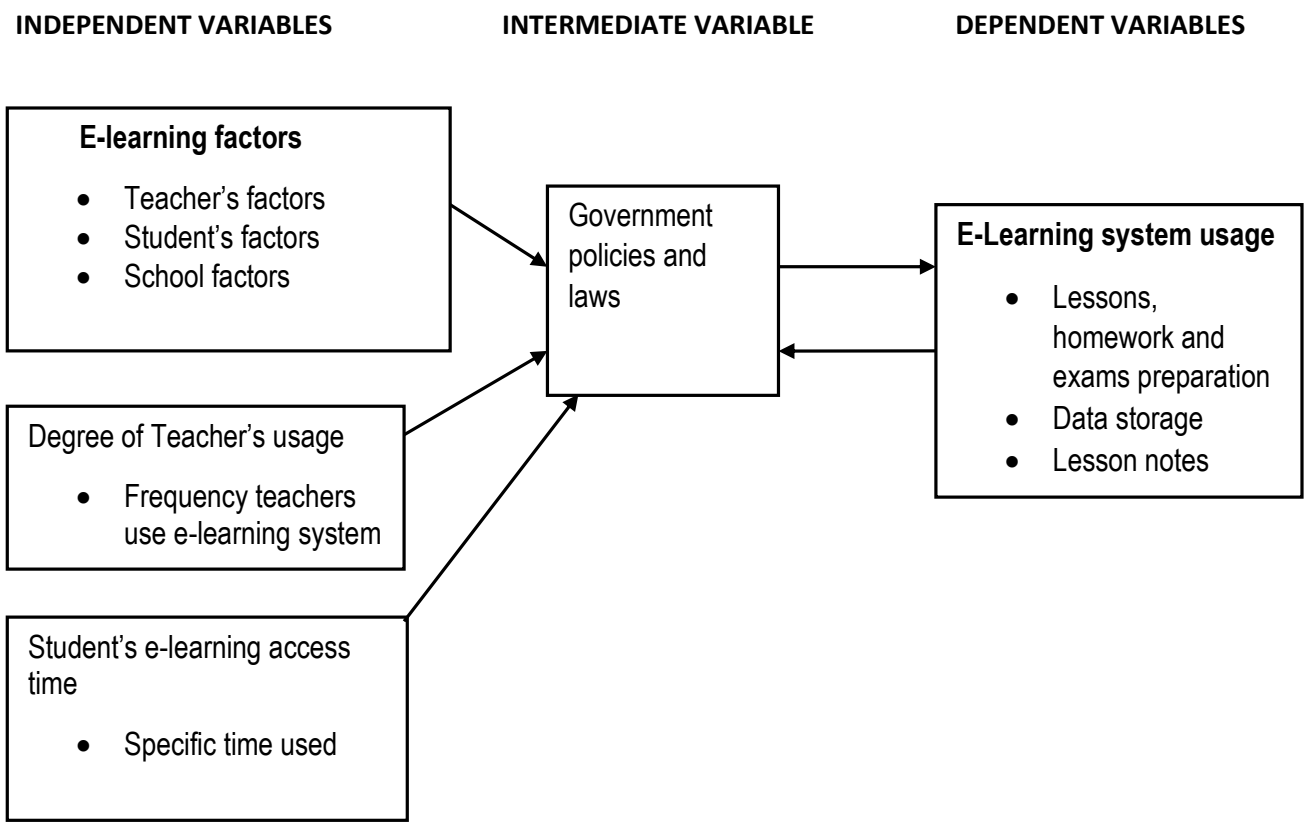
Literature from different contexts has revealed that importance of Reneal e-learning in secondary school in Tanzania. Reneal e-learning seeks to give digital information accessible via the server where students can use these resources to enhance their learning activities due to the rising student population, which surpasses the capacity of the available teachers and learning resources. A portion of the study was designed to show how the available data mining techniques may be used to give crucial information on kids' access to the secondary school system. Also, other studies showed how successful a Reneal e-learning system is. Others examined how the self-efficacy of the instructors. Among the reviewed literature, no study showed the relationship between school and teacher factors influencing Reneal e-learning usage in government secondary schools in Arusha. This study will fill the identified knowledge gap.

2.5 Conceptual framework

The term "conceptual framework" refers to the researcher's comprehension, hypothesis, or examination of either an existing framework or model, or of how various existing concepts interact to illuminate a specific issue. It demonstrates to the reader how many components interact to make research and results easy to understand (Snyder, 2019). In the current study, the framework explores school and teacher factors influencing Reneal e-learning system usage in government secondary schools in Arusha.

The relationship between independent and dependent variable assumes that school and teacher factors influence Reneal e-learning usage in government secondary schools.

Figure 1.0 Conceptual Framework



Source: Researcher (2022)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the descriptions on how this research was done. Specifically, it tells the procedures which the researcher adopted in describing, explaining and predicting phenomena. This part deals with describing the methods which were used by the researcher to find answers of specific objectives of the study. The section provides detailed description of the research methodology which includes; research approach, description of the study area, sampling design and procedures, variables and measurement procedures, methods of data collection, data processing and analysis as well as ethical consideration.

3.1 Research Design

The study used a non-experimental research design. According to Sileyew (2019), the research design is the overarching plan you select to integrate the many study components in a logical and cogent manner, so assuring the researcher can successfully answer the research problem. It serves as the guide for the data collecting, measurement, and analysis processes. In a non-experimental it may provide a rich understanding of the contexts, process, event, or situation and explain why results occurred, which may be essential for building result chains.

3.2 Area of study

The study was conducted at Arusha DC. The Reneal computer lab project is mostly centered in Arusha districts' schools. Arusha DC was purposively chosen for this study, and secondary schools that were included in the study included Bangata, Einoti, Elerai, Enyoito, Ilkidinga, Kimnyaki, Kinana, Kiranyi, Mateves, Mlangarini, Mringa, Mukulat, Sambasha, Ngiresi, Olmotonyi, Olturmet, Osiligi, Kimaseki, Sokon2 and Suye secondary school.

3.3 Research Approach

The study used a mixed research approach integrating quantitative and qualitative data. Mixed method is a “type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches for the broad purposes of breadth and depth of understanding and corroboration.” The method combines multiple techniques to enrich the research findings.

3.4 Population, Sample and Sampling Techniques

3.4.1 Population

Population in this research refers to as a comprehensive group of individuals, institutions or objects with common characteristics that the researcher is interested with. The common characteristics of the groups distinguish them from other individual, institutions and objects. A study's target population could be a wider group of people, organizations, or objects that share one or more traits. It comprises of all instances of people or things that meet a given requirement. The teachers working in the district of Arusha's public schools are the study's target population.

The total population of the study was 620 which included students, teachers and Head of schools. The population included respondents from each of the 20 selected public secondary schools in the study area. From each school 31 respondents were randomly selected as described in section 3.4.3 to make a total of 620 respondents. According to Thomson, Rhoda, Tatem and Castro (2020), a population is the pool of individuals from which a statistical sample is drawn for a study. The population for this study were teachers, head of schools and students.

3.4.2 Sample size

A sample size is a number of participants chosen from the general population who are thought to be representative of the actual population for that particular study. For the study to be properly completed and to yield reliable, statistically significant results, the sample size is crucial. Sample is defined as subset of units selected from a larger set of the same units.

In this study, the sample size of the study was determined based on the formula as follows; -

$$n = \frac{N}{= 1 + N (e)^2}$$

Where; N = the total population; n = the required sample size; e = the precision level which is = (0.05%), where confidence interval is 95%

The respondents will be chosen intentionally based on how well their skills, knowledge, familiarity with the area, and ability to contribute to the overall research objectives.

Therefore, the sample size was determined as;

$$n = \frac{N}{1+N (e)^2} = \frac{620}{1+620(0.05)^2}$$

= 243 respondents

For this study therefore, the sample size was 243 respondents.

3.4.3 Sampling Technique

The stratified random sampling strategy was used in the current investigation. The researcher splits the entire population into multiple subgroups or strata, then randomly selects the final subjects proportionately from the various subgroups. This procedure is known as stratified sampling.

3.5 Data Collection Methods

Both primary and secondary data sources were employed in the investigation. Data was defined by Sharma (2017) as the information a researcher collects for a study. Researchers should be aware of the difference between primary and secondary data. The information a researcher gathers from the field is known as primary data. The information that researchers get from casual interviews, books, or research papers is known as secondary data. The use of both primary and secondary data helped the researcher to get enough information about the study under investigation.

3.5.1 Primary Data

Primary data from respondents were collected by using structured questionnaires and interview.

3.5.1.1 Questionnaires

The use of structured questionnaires has many advantages including its ability to cover large number and area compared to other methods. Moreover, through questionnaires, biases are reduced. It is possible to cross-reference the data obtained by questionnaires with the data gathered through other data gathering methods. Taherdoost agreed that questionnaires are typically less expensive and don't take up a lot of administration time (2017).

In the current study, the structured questionnaires were prepared in English language. Questionnaires had four options for respondents to indicate their level of agreement or disagreement as follows: ranging from 1 (strongly disagree) to 4 (strongly agree).

Questionnaires were administered to individuals in their work places. Where possible the researcher waited for a questionnaire to be filled and then collected them from respondents. When the respondents were busy, the researcher leaved the questionnaires and kept in contact and agreed on the day and time for collection of questionnaires.

It is a cost-effective method of acquiring data. It saves time, money, and effort for both the sender and the recipient. The questionnaire approach of conducting the study is relatively inexpensive. The only costs associated with the survey are for the printing and mailing of the paper. When the sample population is dispersed over a vast area, it is actually the greatest approach to gather information when compared to other methods like interview, focus group discussion, or observation. In a short amount of time, it allows for broad coverage.

Communication with a large number of people who would not otherwise be reachable is made possible by questionnaires. It can simultaneously cover a huge group. According to Goode and Hatt, the researcher can embrace the usage of a questionnaire to save costs while covering a group of persons who are dispersed geographically.

Responses to questionnaires could come in a flash. In this instance, it is not necessary to personally contact the respondent or carry out the study for an extended period of time. As a result, the questionnaire is the fastest way to gather information compared to other methods.

The greatest way to learn about private, confidential issues is through a questionnaire. For instance, by keeping the respondents' names concealed, information about their marital relationships, sexual relationships, and secret desires can be easily discovered.

Questionnaires are seen to be more beneficial and affordable than other approaches such as focus group discussions, scheduled interviews, or observation.

Comparatively speaking, a questionnaire is simpler to create, prepare, and administer. It doesn't call for a lot of technical expertise or understanding. Less pressure is placed on the respondents to respond right away. Respondents are free to respond at their convenience, as opposed to interviews

or observations, which necessitate precise fixation of time and circumstance in order to be successful.

Questionnaires have unique advantages regarded to validity of information. In methods like focus group discussion, observation and interview, the reliability of responses depends on the way the researcher has recorded them. Here they may present prejudiced or biased information of their own. But in case of a questionnaire, the responses given by the respondents are available in their own language and version. Therefore, it cannot be misinterpreted by the researcher.

Questionnaire method in this study enabled the researcher to reach all groups included in the study at the same time. Through questionnaires the researcher expected to get respondent's views that were assisted to identify the factors influencing reneal e-learning system usage in government secondary schools in Arusha District in the study area.

Questionnaires were administered in the specified wards found in the study area basing on sample size. More questionnaires were given to the ward with higher population size. Respondents were required to fill the questionnaires under the supervision of the researcher and other assistants proposed by the researcher. Since the language used in the questionnaires is English, there will be a need to translate the questions in Kiswahili and other local languages to make sure all respondents understand the questions and answer them appropriately. Enough time was given by the researcher for the respondents to fill the questionnaires.

Information collected through questionnaires were coded and analyzed using SPSS computer program. Results were presented as frequencies, percentages, means and standard deviations.

3.5.1.2 Key informants' interview

The researcher prepared a checklist of probing questions that were administered to key informants. Key informants are individuals who are appropriate for their views on the issue pertaining e-learning usage and its implication to the whole process of learning. Key informants comprised of Heads of schools and Teachers found in the study Area. The Questions aimed to get information related to factors influencing reneal e-learning system usage in government secondary schools in Arusha District.

In this research, the sample size for interview was 15% of all respondents in each of the five selected schools. Interview was essential as it allowed the researcher to collect bulk information through social relationships and interactions. It assisted the researcher to make follow-up, probe and press participants for more and more clarified information. The researcher informed the interviewees before the day and time for interview session. 15 minutes were expected to be sufficient for face-to-face interview. Interview for respondents was conducted in the specified schools in the study area. The researcher expected to gather adequate explanations that helped to find out the answers for objectives one, two and three. The questions for interview focused on identifying the factors that influence e-learning usage, ascertain the degree to which teachers use reneal e-learning and learn when students usually access the Reneal e-learning system in the study area. The researcher used mobile phone and note book to record all responses from the participants. The responses were used to prepare a written transcript. Ideas obtained from the written transcript were arranged into questions and themes and interpreted by relating them to the research specific objectives.

3.5.2 Secondary Data

The researcher collected secondary data from Regional Education Offices, District Education Offices and Schools. Other secondary data were collected from the Regional Library located in Arusha City.

More data were obtained from documents and publications from literature search using Internet and relevant references cited in various articles. The articles were further searched on Google scholar using key cords such as; (1) Teacher factors influencing e-learning usage (2) Student factors influencing e-learning usage (3) School factors influencing e-learning usage. All articles gathered were examined regarding factors influencing reneal e-learning system usage in government secondary schools in Arusha District. This information was important to broaden the perspectives and provided an in - depth understanding of the major objective of the study.

3.6 Data Analysis Methods

Statistical Package for Social Science (SPSS) computer program was used for data analysis. SPSS statistics is a computer software which is used for logical batched and non-batched statistical analysis. The researcher used this software as he is conversant to it and is one of the most popular statistical packages which can be used for complex data manipulation and analysis. SPSS is capable of manipulating data from any kind of file and use them to produce tabulated charts, reports and plots of trends and distributions, conduct complex statistical analyses and descriptive statistics.

In addition, the researcher used SPSS for data analysis since it is beneficial for both qualitative and quantitative data. Therefore, even if there are several software packages available in the market to Analyze quantitative data, SPSS 22 is more preferable to the researcher than other software. This is due to the fact that SPSS 22 software is friendly to users and easy to use, and it also helps in analysis of even larger data sets. SPSS 22 gives a helpful graphical representation and also valid

results for the data that has been entered. SPSS 22 generally is just a drag and drop process which has almost all basic and some advanced statistical analysis which assist researchers to easily adapt to this software and can do the analysis and obtain valid results.

In this study, information collected through questionnaires was coded and given statistical values and analyzed by using SPSS 22 computer software. Results were presented as frequencies, percentages, means and standard deviations.

Information collected from key informant's interview and focus group discussion was used to prepare written transcripts of the discussions. From the transcripts, major themes were identified and separated into sections with descriptive titles. The data with descriptive tittles were organized by questions and themes. The themes were coded and given statistical values and analyzed using SPSS 22 computer program. Results were presented as frequencies, percentages, means and standard deviations.

All articles gathered from secondary data were examined regarding the use of e-Learning in schools. This information was important to broaden the perspectives and provided an in-depth understanding of the major objective of the study.

Real feelings of some respondents were captured through quotable narratives. The quoted narratives of the respondents were considered to assist the researcher to get respondents' opinions on the factors influencing Reneal e-learning system usage in government secondary schools in Arusha.

3.7 Statistical Modeling

In order to better comprehend the link between a dependent variable and a group of independent factors, the research selected a regression model for data analysis (Wakefield and Baker, 1998). In

this particular study, multiple regression models were used to analyze the factors influencing Reneal e-learning system usage in government secondary schools in Arusha District. Multiple regressions are an extension of simple linear regression, and they are used when one wants to predict the value of a variable based on the value of two or more other variables, (John H, 2014). The structural equation of the model used is:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where:

Y = E-learning system usage

X1= E-learning factors (Teachers, students and schools)

X2 = Degree of Teacher's usage

X3 = Student's e-learning access time

$\beta 0$ = is the regression constant term

ε = a random error term.

The theory behind using linear regression is that the researcher wanted to assess if there was a relationship between E-learning factors, Degree of Teacher's usage and Student's e-learning access time and e-learning system usage at $p<0.05$.

Additionally, the linearity of the relationship between the independent and dependent variables was looked at, with the predicted value of the dependent variable being a straight-line function of each independent variable while holding the others constant.

3.7 Reliability and Validity of the Study

3.7.1 Validity

The degree to which a study accurately represents the particular notion that the instruments were designed to test is known as validity in research (Cohen, Manion and Morrison, 2017). There are three major categories of validity: face validity, content validity, and construct validity. Discussed include validity, criteria validity, and reliability. To guarantee the validity of the study, the researcher employed the face and content validity.

3.7.2 Reliability

Cronbach's alpha, the most popular reliability statistic, estimates internal consistency by examining how each test item relates to each other and to the entire test, or internal coherence of data, according to George & Mallery (2003), where "> 0.9 – Excellent, >0.8 – Good, > 0.7 – Acceptable, > 0.6 – Questionable, >0.5 – Poor, and <0.5 – Unacceptable". In this study, the Cronbach's alpha reliability coefficient expressed as a coefficient between 0 and 1 was used. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. According to the rules of thumb, the value of alpha of > 0.7 is acceptable and reliable for further analysis. Therefore, based on the results provided in table below obtained from SPSS 22, the Cronbach's alpha coefficient was found to be 0.76 in average indicating that the value were acceptable and good.

Table 3.1: Reliability Coefficient

Measured Variables	N	α=Alpha	Comment
E-learning factors (Teachers, students and schools)	243	.846	Reliable
Degree of Teacher's usage	243	.701	Reliable
Student's e-learning access time	243	.746	Reliable

Source: Field data (2022)

3.8 Ethical Consideration

Any research must take ethics into account. The following ethical considerations were noted in this study. First, the researcher made sure that all respondents gave their consent to participate in the study, and that the data was kept private and used solely for that reason. Second, prior to data collection sessions, the researcher informed the respondents. Finally, the researcher made sure that the respondents' identities were protected from any potential reprisals by maintaining their anonymity.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study based on the responses provided by respondents. The analysis and discussion of the findings of this study was guided by three research questions developed by the researcher. The main objective of the study was to assess the factors influencing Reneal e-learning system usage in government secondary schools in Arusha District. The specific objectives were to examine factors that influence the usage of Reneal e-learning system in secondary schools in Arusha District, to ascertain the degree to which teachers use Reneal e-learning and to learn when students usually access the Reneal e-learning system in secondary schools in Arusha District. The findings assisted the researcher to reach a valid conclusion and suggested sound recommendations.

4.2 Results

4.2.1 Social Demographic Characteristics

In this research gender of the respondents was considered, both male and female respondents were involved in the study. The level of education, subject area, and job experience of the respondents were also considered in the study. Results have been summarized in tables as shown thereafter. These had significant implications on the nature and quality of information received.

4.2.1.1. Gender of the Respondents

The statistics in Table 1 show that the proportion of male respondents was slightly greater (61.7%) than female respondents (38.3%).

Table 4.2: Distribution of respondents by gender

	Frequency	Percent
Males	150	61.7
Females	93	38.3
Total	**243**	**100.0**

Source: Field data (2022)

4.2.1.2 Level of education of the Respondents

Basing on the level of education of the respondents, findings show that majority were diploma holders (58.0%) and degree holders were (41.2%). Some respondents were holders of master degree (2%).

Table 4.2: Distribution of respondents by level of Education

	Frequency	Percent
Certificate	0.0	0.00
Diploma	141	58.0
Bachelor degree	100	41.2
Master degree	2	0.80
Total	**243**	**100.0**

Source: Field data (2022)

4.2.1.3 Job experience of the Respondents

Respondents were asked to state their job experience with their current organization. Results have been well presented in table 4.3.

Table 4.3: Distribution of respondents by job experience

	Frequency	Percent
1 - 2 years	50	20.6
3 - 5 years	153	63.0
Above 6 years	40	16.5
Total	**243**	**100.0**

Source: Field data (2022)

Results show that majority of the respondents had a working experience of 3 to 5 years (63%) and others with an experience of 1 to 2 years (20.6%). Few had working experience of above 6 years (16.5%). These findings indicate that majority of the respondents had worked as teachers in public secondary schools found in Arusha District and therefore have enough period to be familiar with factors that influence Reneal e-learning system usage in the study area.

4.2.1.3 Teaching subjects of the Respondents

Results show that, majority of the respondents teach art subjects (61.7%) and few others teach science subjects (36.2%) and ICT subjects (2.1%). Summary of the results have been presented in table 4.4.

Table 4.4: Distribution of respondents by teaching subjects

	Frequency	Percent
Science Subjects	88	36.2
ICT	5	2.10
Art Subjects	150	61.7
Total	**243**	**100.0**

Source: Field data (2022)

These results imply that there are very few ICT teachers to influence Reneal e-learning system usage in the study area. The majority of the respondents teach subjects other than ICT.

4.2.2 Inferential Data Analysis

Inferential analysis of research questions was meant for determination of perception of respondents regarding various aspects under investigation. This was guided by the three specific research objectives which had corresponding questionnaire items to which respondents were to indicate their level of agreement or disagreement.

4.2.2.1 Factors that influence the usage of Reneal e-learning system

Under this research objective, the researcher sought to identify the factors that influence the usage of Reneal e-learning system in public secondary schools found in Arusha. Respondents were to respond by ticking the most appropriate option ranging from 1= Strongly Disagree, 2 = Disagree, 3 = Agree, 4= Strongly Agree. Scale of mean score interpretation was as follows:

1.0 To 1.6 Strongly Disagree

1.6 To 2.0 Disagree

2.1 To 3.0 Agree

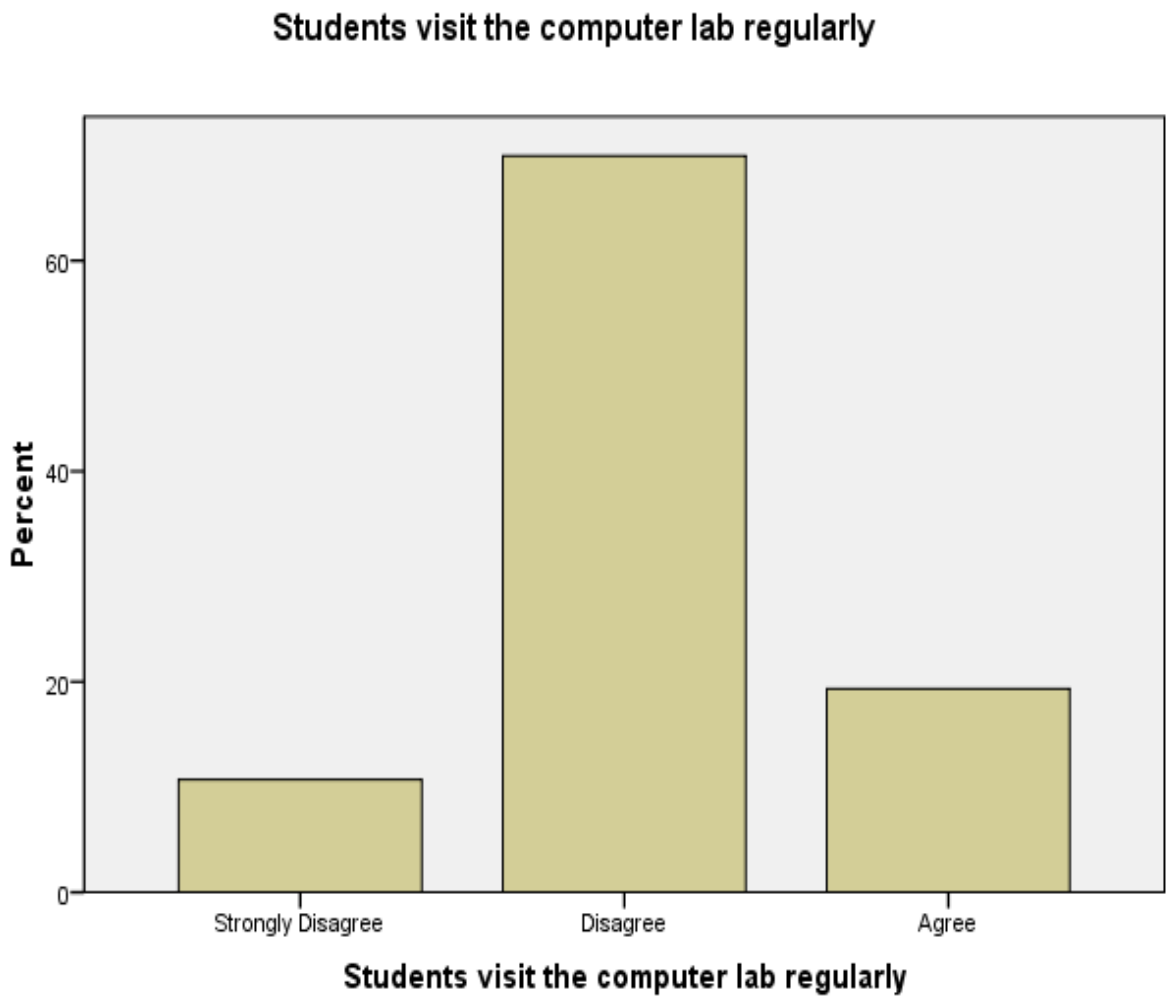
3.1 To 4.0 Strongly Agree

Table 4.5: Descriptive statistics of factors that influence the usage of Reneal e-learning system

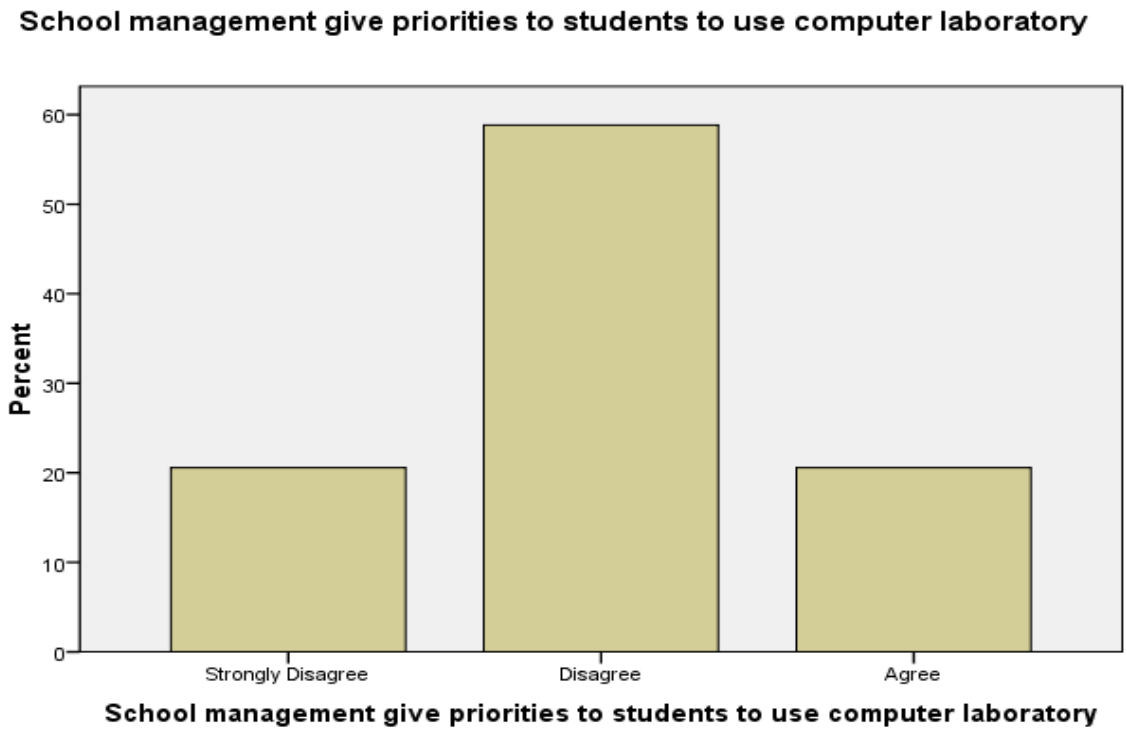
	%	Mean	Std. Deviation	Interpretation
Students visit the computer lab regularly	**52.1**	2.0864	.54236	Disagreed
School management give priorities to students to use computer laboratory	**50**	2.0000	.64282	Disagreed
Students are interested with the use of Reneal e-learning system	**85**	3.4198	.64662	Strongly Agreed
There are sufficient ICT teachers to facilitate e-learning system in the school	**33.7**	1.3539	.47917	Strongly Disagreed
Teachers use computer laboratory in teaching their subjects	**56.2**	2.2593	.43913	Agreed

Source: Field data (2022)

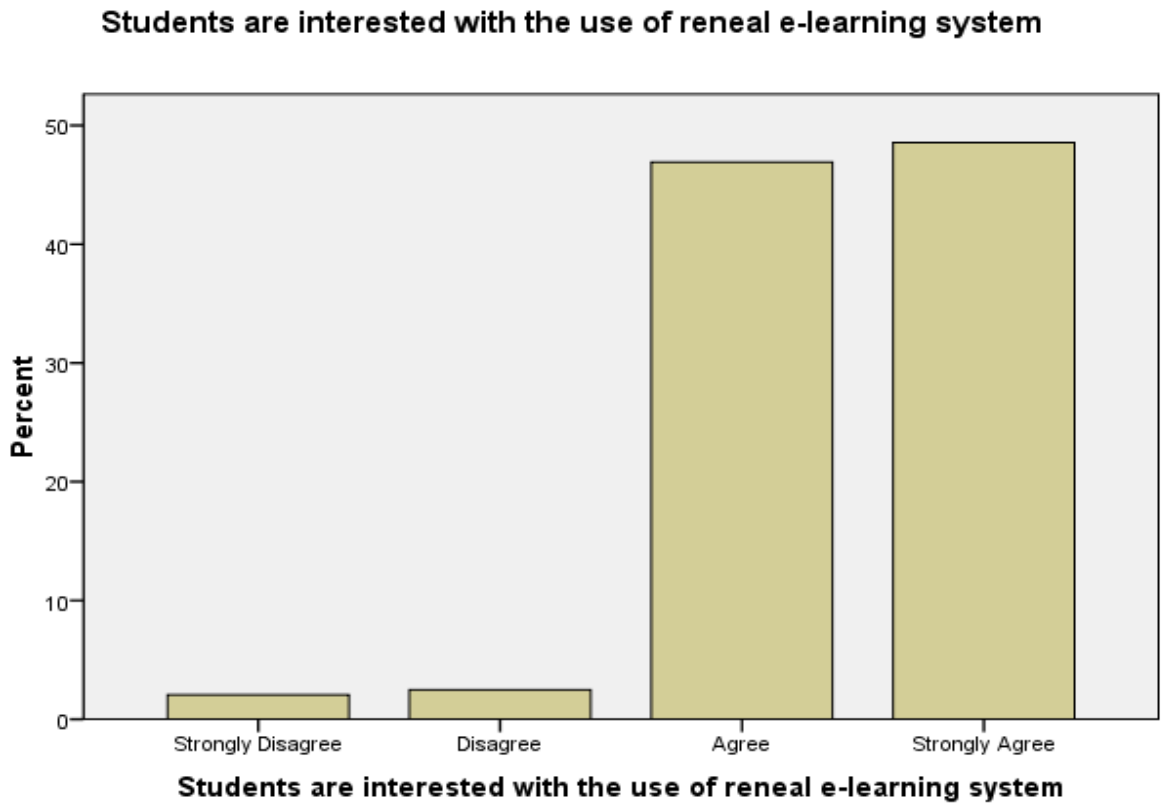
Graph 4.1.1: Students visit the computer lab regularly



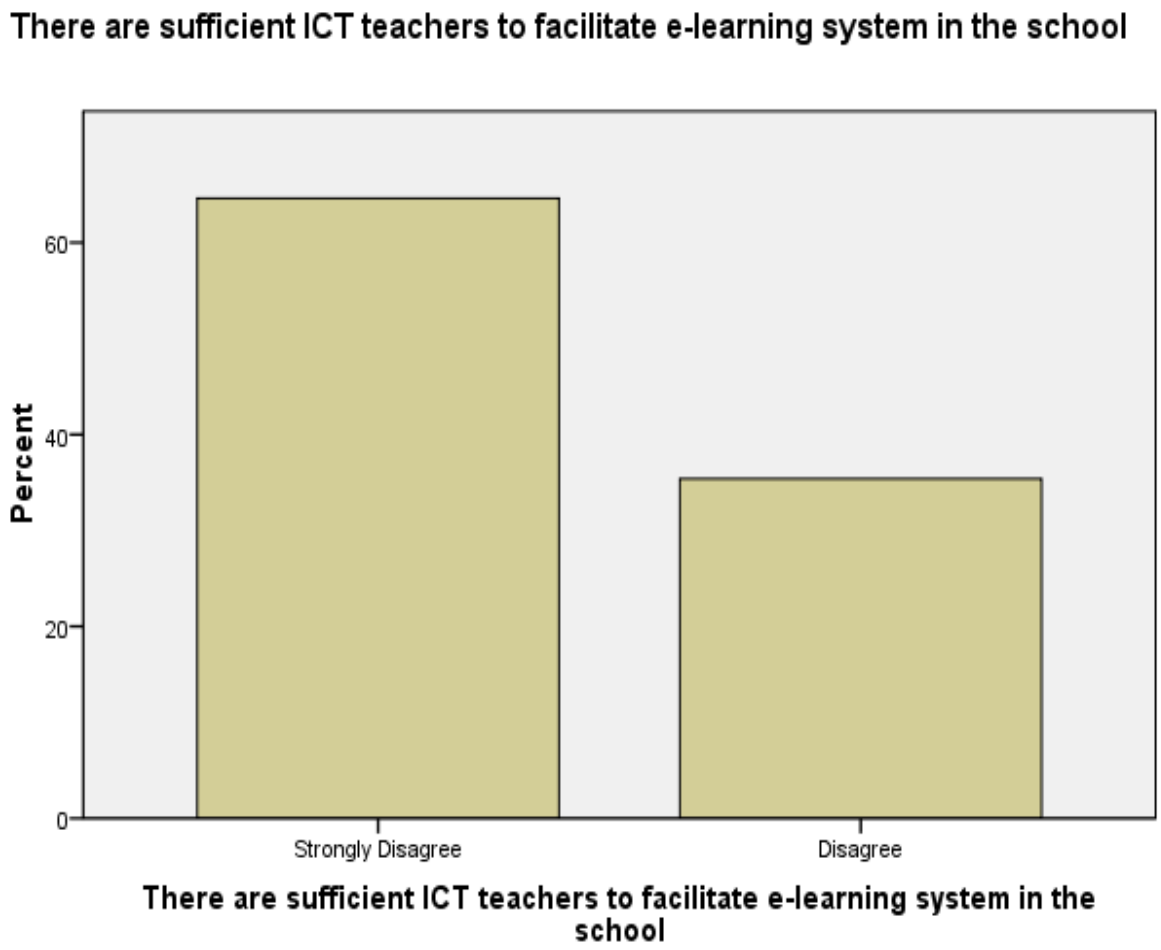
Graph 4.1.2: School management give priorities to students to use computer laboratory



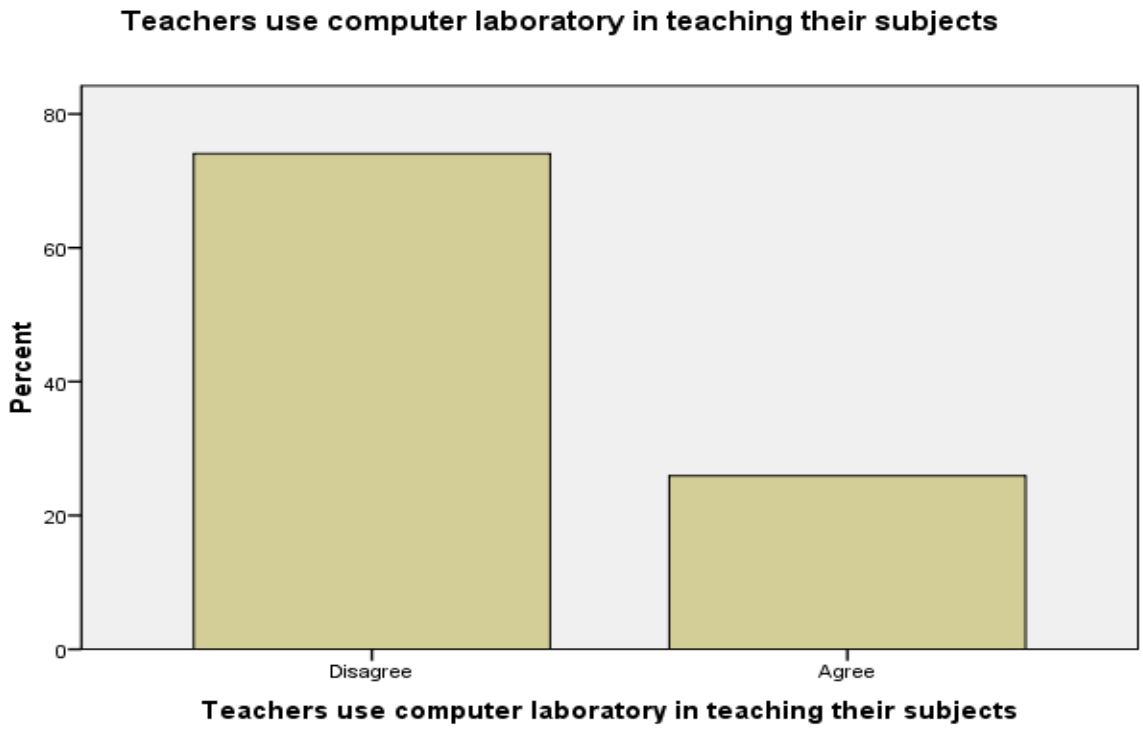
Graph 4.1.3: Students are interested in the use of Reneal e-learning system



Graph 4.1.4: There are sufficient ICT teachers to facilitate e-learning system in the school



Graph 4.1.5: Teachers use computer laboratories in teaching their subjects



As summarized in table 4.5 and graphs 4.1.1 to 4.1.5 above, findings revealed that respondents disagreed that, students visit the computer lab regularly (Mean = 2.08) or 52.1%. More results showed that respondents disagreed that, School Management gives priority to students using computer laboratory (Mean = 2.00) or 50% and strongly agreed that, students are interested with the use of Reneal e-learning system (Mean = 3.4) or 85% for those schools with computer laboratories. Further results showed, some respondents strongly disagreed that there are sufficient ICT teachers to facilitate the e-learning system in the school (Mean = 1.3) or 33.7% and some respondents agreed that teachers use computer laboratory in teaching their subjects (Mean = 2.2) or 56.2%.

The study findings revealed that factors that can influence the usage of the Reneal e-learning system are not well addressed in most of the secondary schools found in Arusha District. This may

be one of the reasons that explains why the Reneal e-learning system is not used in some schools. The study on the other hand revealed that, unavailability of ICT teachers is another hindrance to e-learning system in the study area.

E-learning is rarely offered by academic institutions, nor do instructors have the time and opportunity to put what they have learned from e-learning courses into practice, as Asongu and Le Roux (2017) demonstrate. The adoption and use of e-learning by secondary school students offers a chance to think about how e-learning might advance instruction. Among the benefits of it are easier access to learning opportunities, convenience in terms of time and location, a wider range of learning resources, improved opportunities for individualized learning, and the development of more powerful intellectual tools for students.

Despite academic institutions' interest in implementing e-learning facilities, Eze et al. (2018) argued that even when those facilities are available, students lack the skills and knowledge to use them effectively.

As per Ostund (2015), students struggle with issues such as poor teaching methods in their educational programs, limitations on how they can use e-learning, poor vision, and a lack of procedures for putting e-learning into practice.

Thus, according Oguzor (2018), the implementation and use of e-learning systems are hampered by a lack of the commitment and expertise needed for e-learning, as well as by the discontent seen during the construction of e-learning facilities.

According to Otuka (2017), Online educational training should be available to both teachers and students. They should also be aware of the various learning methodologies available and when to use them. However, because the majority of them still use a teacher-centered approach, this has a

huge impact on teachers. Many people are still unsure of how to effectively use e-learning tools in their instruction.

Poor and insufficient infrastructure is a significant barrier to the usage of ICT, according to Anene et al. (2014). Nigerian students made it known that the schools lacked the resources to construct proper e-learning labs and library domains. Due to the limited bandwidth, students cannot participate in online seminars, exams, or discussions with their lecturers (Eze et al., 2018).

In addition, Chiaha et al. (2013) demonstrate in their study on e-learning facilities that students in public academic institutions have access to them, the extent to which they use the services, and the barriers that prevent them from using the facilities. Online learning resources are accessible to more than 41% of pupils, according to the study. Electric power supply and network connectivity issues further impede access to e-learning resources (Chiaha et al., 2018).

During the interview one respondent urged that,

"The e-learning in our school is not well adopted as we do not have ICT teachers that can facilitate the learning process. Most teachers that are used lack ICT skills though there is a good computer laboratory with all the facilities required".

4.2.2.2 To ascertain how frequently teachers use Reneal e-learning system

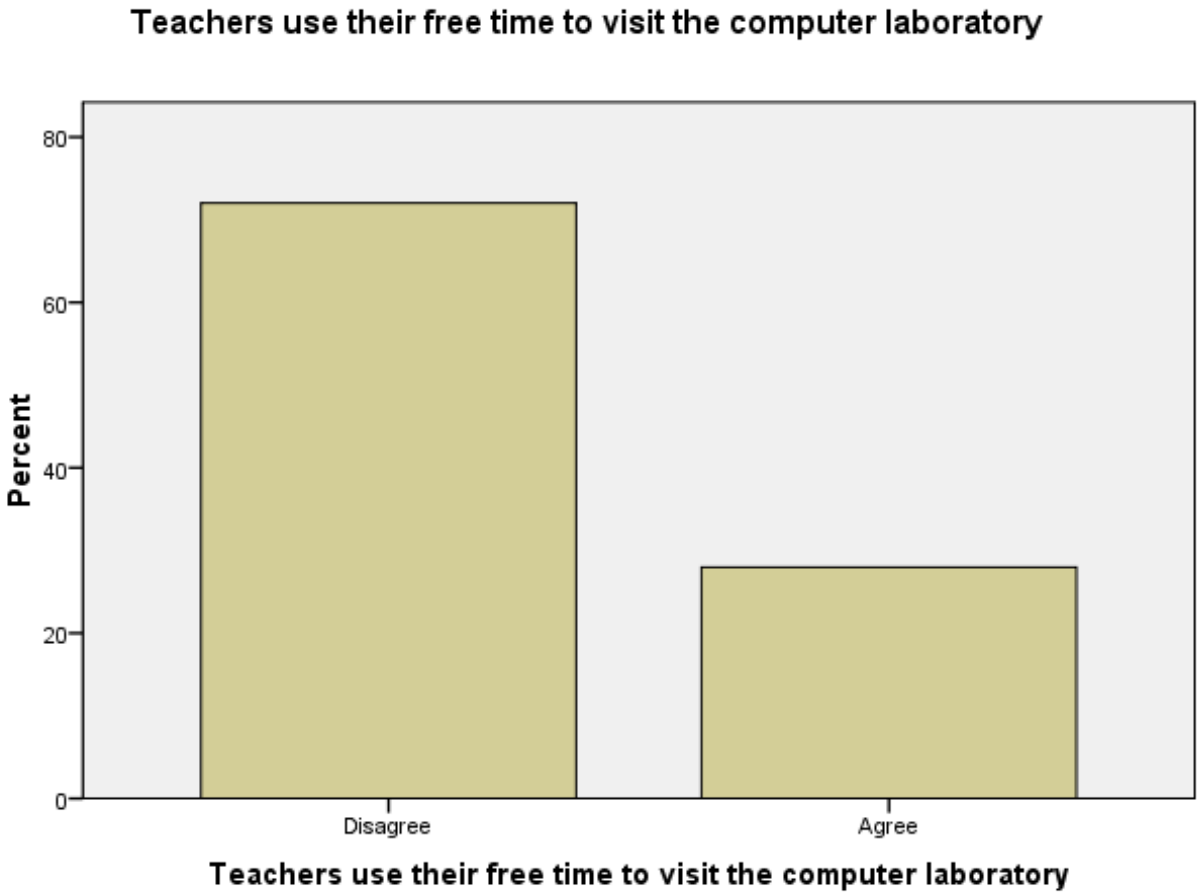
Under this research objective, the researcher sought to identify how frequent teachers use the Reneal e-learning system in public secondary schools found in Arusha District. Results have been summarized in table 4.6 below.

Table 4.6: Descriptive statistics of how frequent teachers use Reneal e-learning

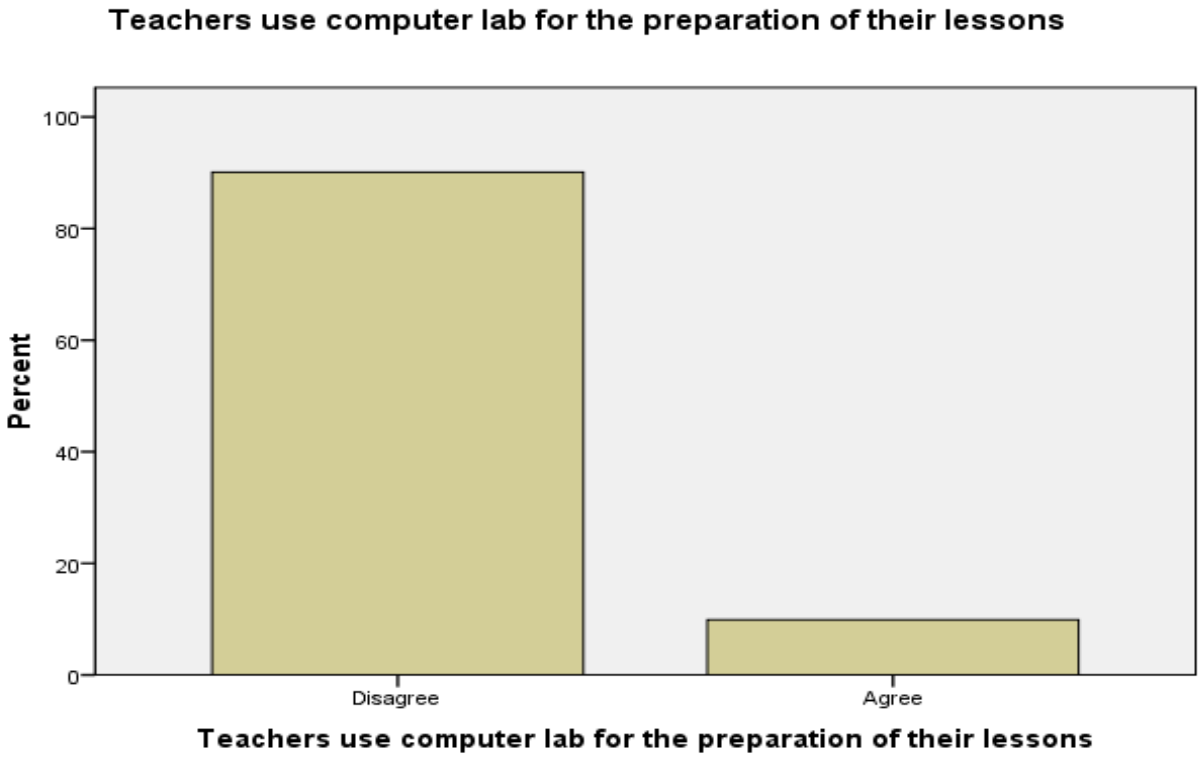
	%	Mean	Std. Deviation	Interpretation
Teachers use their free time to visit the computer laboratory	**56.7**	2.2798	.44984	Agreed
Teachers use computer lab for the preparation of their lessons	**50.2**	2.0988	.29896	Disagreed
Teachers use e-learning to prepare and administer home works and assignments to their students	**36.5**	1.4609	.66301	Strongly Disagreed
School management does not allow teachers to frequently use the computer lab for their works	**62.5**	2.5021	.50103	Agreed
Most teachers use computer for the preparations of examinations and storage of exam results	**49.3**	1.9753	.64235	Disagreed

Source: Field data (2022)

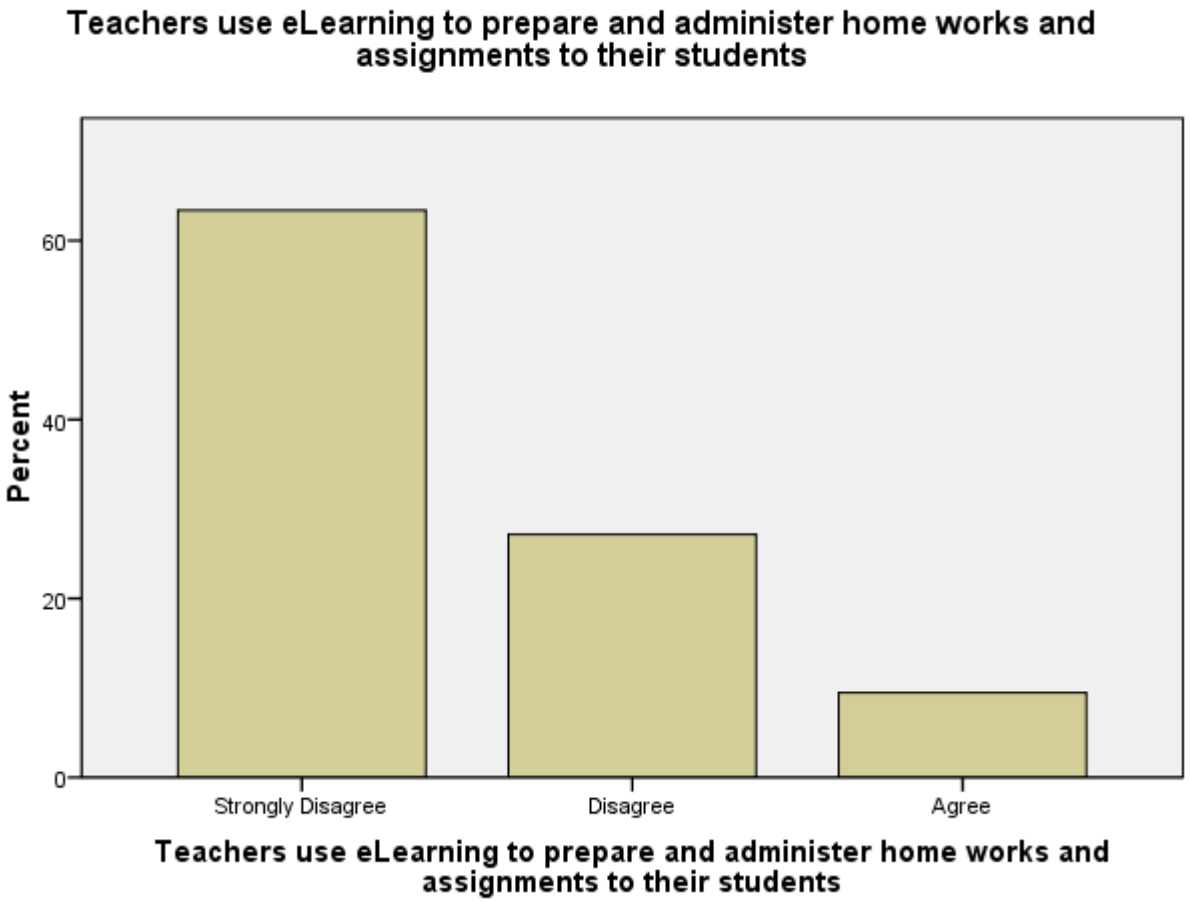
Graph 4.2.1: Teachers use their free time to visit the computer laboratory



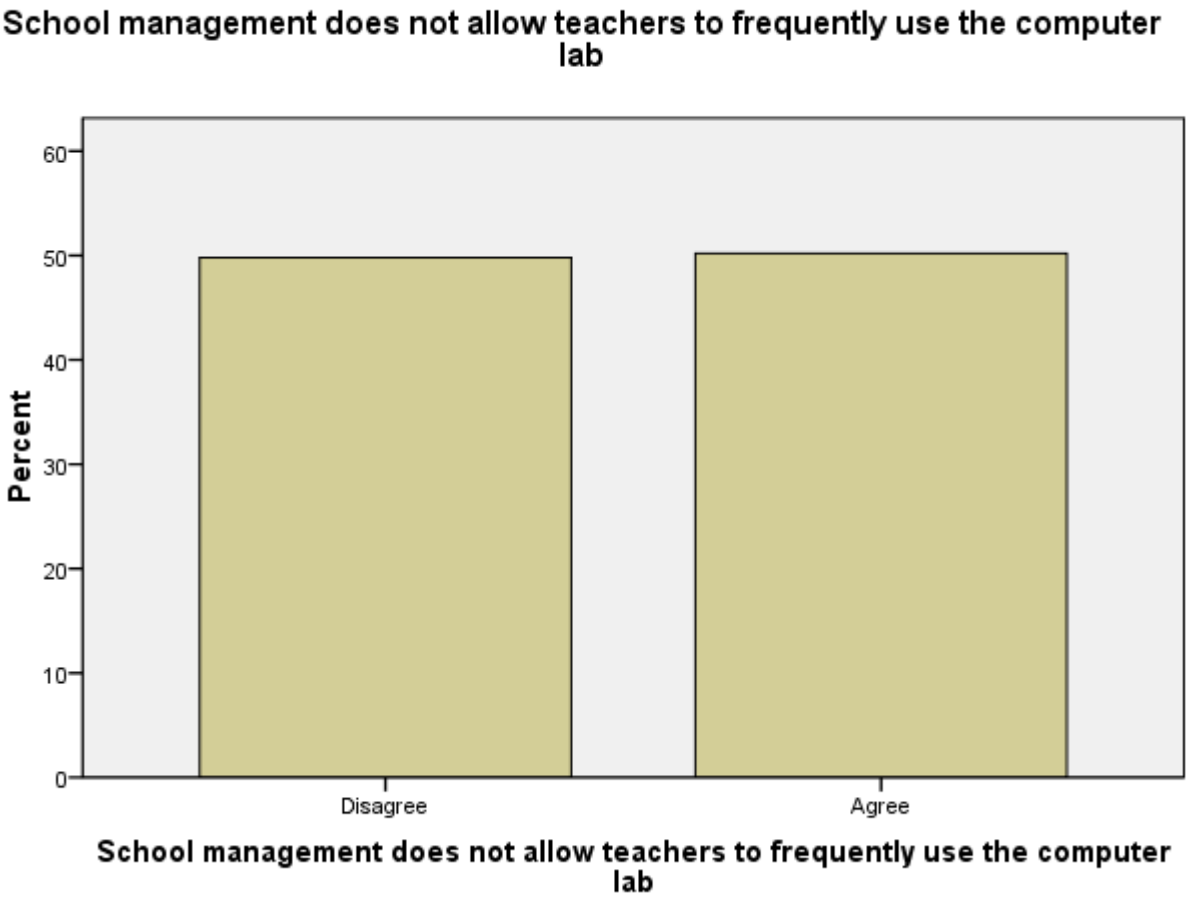
Graph 4.2.2: Teachers use computer lab for the preparation of their lessons



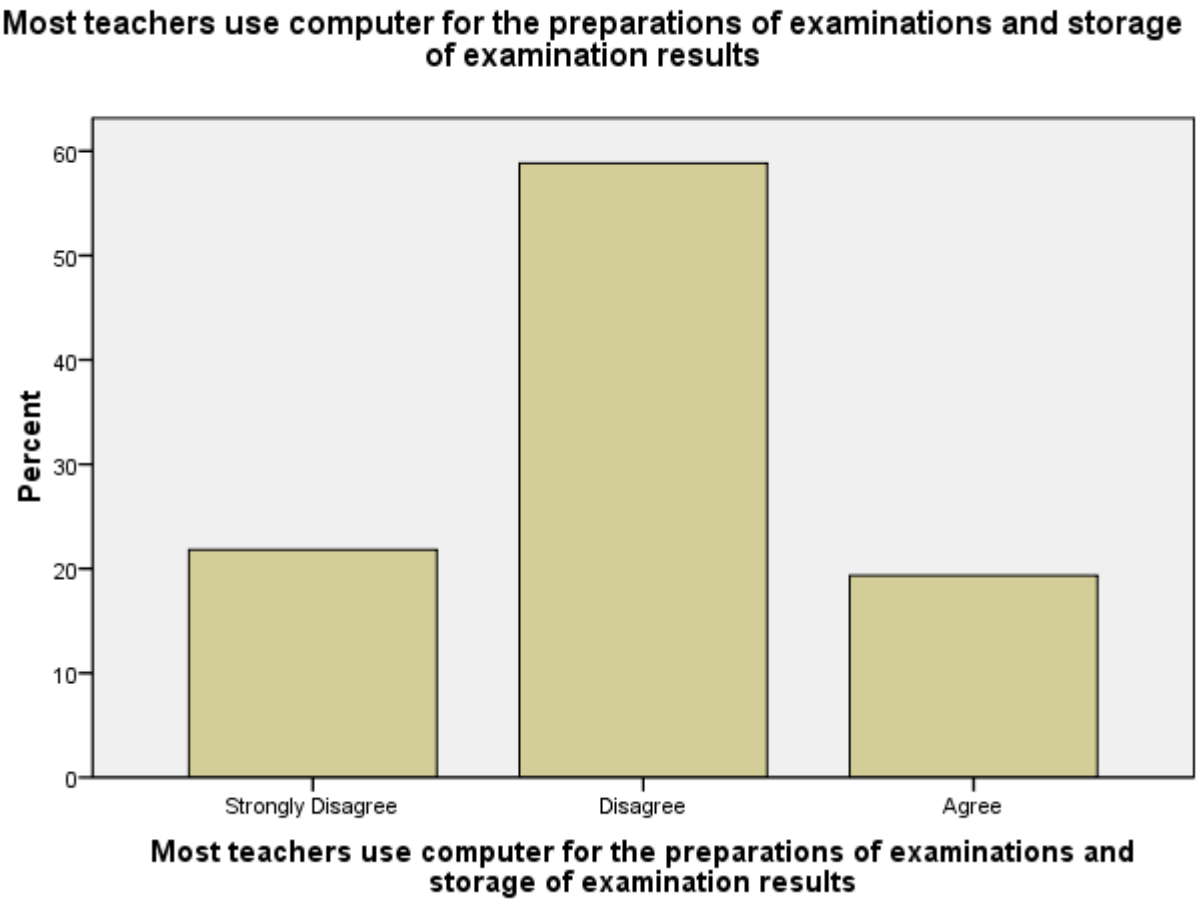
Graph 4.2.3: Teachers use e-learning to prepare and administer home works and assignments to their students



Graph 4.2.4: School management does not allow teachers to frequently use the computer lab for their works



Graph 4.2.5: Most teachers use computer for the preparations of examinations and storage of exam results



As summarized in table 4.6 and graphs 4.2.1 to 4.2.5 above findings revealed that, majority of the respondents agreed that, teachers use their free time to visit the computer laboratory (Mean = 2.2) or 56.7%. Some respondents disagreed that teachers use computer lab for the preparation of their lessons (Mean = 2.0) or 50.2%. Further results showed, some respondents strongly disagreed that teachers use e-learning to prepare and administer home works and assignments to their students (Mean = 1.4) or 36.5%. More results showed that, respondents agreed that, School Management does not allow teachers to frequently use the computer laboratory for their works (Mean = 2.5) or

62.5% and some respondents disagreed that most of the teachers use computer for the preparations of examinations and storage of exam results (Mean = 1.9) or 49.3%.

The study therefore revealed that, the degree of teachers to use Reneal e-learning system is low as most of the basic requirements required are not well addressed by the schools. This implies that the usage of Reneal e-learning system by teachers in the study area is very low.

Abdulhamid TH, (2017) noted that, if computer labs' resources are well supplied, e-learning becomes practical and teachers may be able to utilize the labs frequently. Teachers can divide their classes in half and have one group complete an online lesson while the other group participates in a practical activity or discussion. Online lessons also make excellent homework assignments. Instead of giving students worksheets to do at home or asking them to read and respond to questions in their textbooks, teachers can provide students online lessons and the corresponding online worksheets. For instance, after watching a session on constellations, the teacher can let the pupils walk outdoors and search for constellations in the night sky.

Adeola et al. (2013) pointed out that regular usage of e-learning not only reduces the demand for paper but also makes it simple for teachers to assign homework based on the needs of their pupils. An online lesson is frequently much more interesting than a typical worksheet. Online lessons are fantastic for learning stations and centers because they give groups of students at various levels a more personalized learning experience.

It becomes simple for students to revisit lessons when there are links in their e-learning to pertinent lessons, according to Agostini L and Nosella A (2020). Students can then study the lessons at their own leisure through self-directed learning. Re-sharing lessons that the class has already completed or creating fresh lessons that condense the material covered within a grading period are also options

open to teachers. With this approach, the teacher can modify the curriculum to accommodate the needs of certain pupils.

According to Ahmed T. (2010), students don't need to be physically present in the classroom to profit from online lessons. They can access any lessons online so long as they have an Internet connection. An instructor can offer a link to the lesson for absent pupils to watch and complete on their own. In the same way, if a teacher is going to be out of the classroom, the class can continue with online courses guided by the substitute teachers.

While teachers frequently look forward to holidays as much as students do, Ajadi TO, Salawu IO, and Adeoyee FA (2008) found that sometimes teachers needed extra teaching to assure student understanding. If most students have access to the Internet at home, give them one or two lessons to finish outside of the classroom.

Online lessons, according to Al-Gahtani S.S. (2016), are a fantastic option for students to learn at their own pace. But they are useful for more than just that. They give teachers ready-made, interesting content that they can present to all of their pupils, whether they are in school or not, saving them time.

Since the usage of e-learning system in the study area was found to be very low, all these benefits schools miss and make them lag behind in the world of Information and Communication Technology.

In the interview one respondent noted,

"*The major problem that we face in our institution, is the lack of sufficient number of computers available in the computer laboratory. Very few computers are connected to the Internet. This slows down the effort of teachers in familiarizing themselves with e-learning strategies. Teachers therefore*

are unable to use the e-learning system for teaching, constructing tests and examinations, administering home works and assignments as well as to use computers to store students' academic information".

4.2.2.3 Time students usually access the Reneal e-learning system

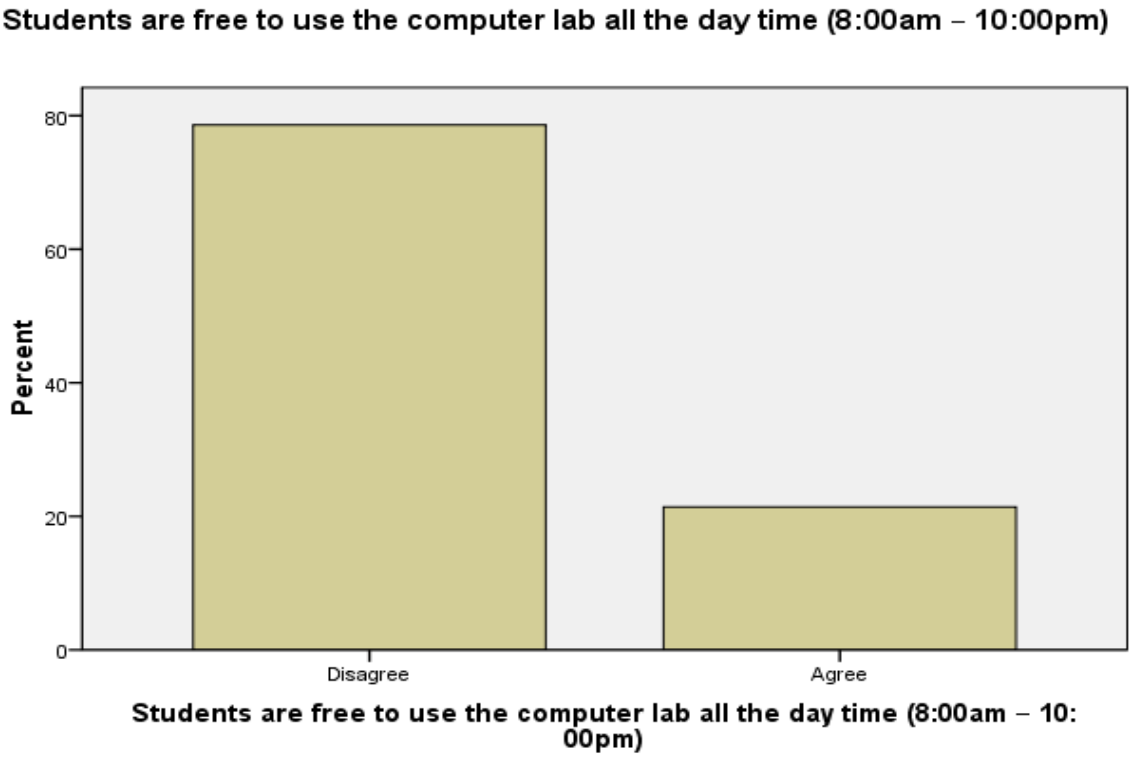
Under this research objective, the researcher sought to identify the time at which students usually access Reneal e-learning system in public secondary schools found in Arusha District. Results have been summarized in table 4.7 below.

Table 4.7: Descriptive statistics of Time Students use Reneal e-learning

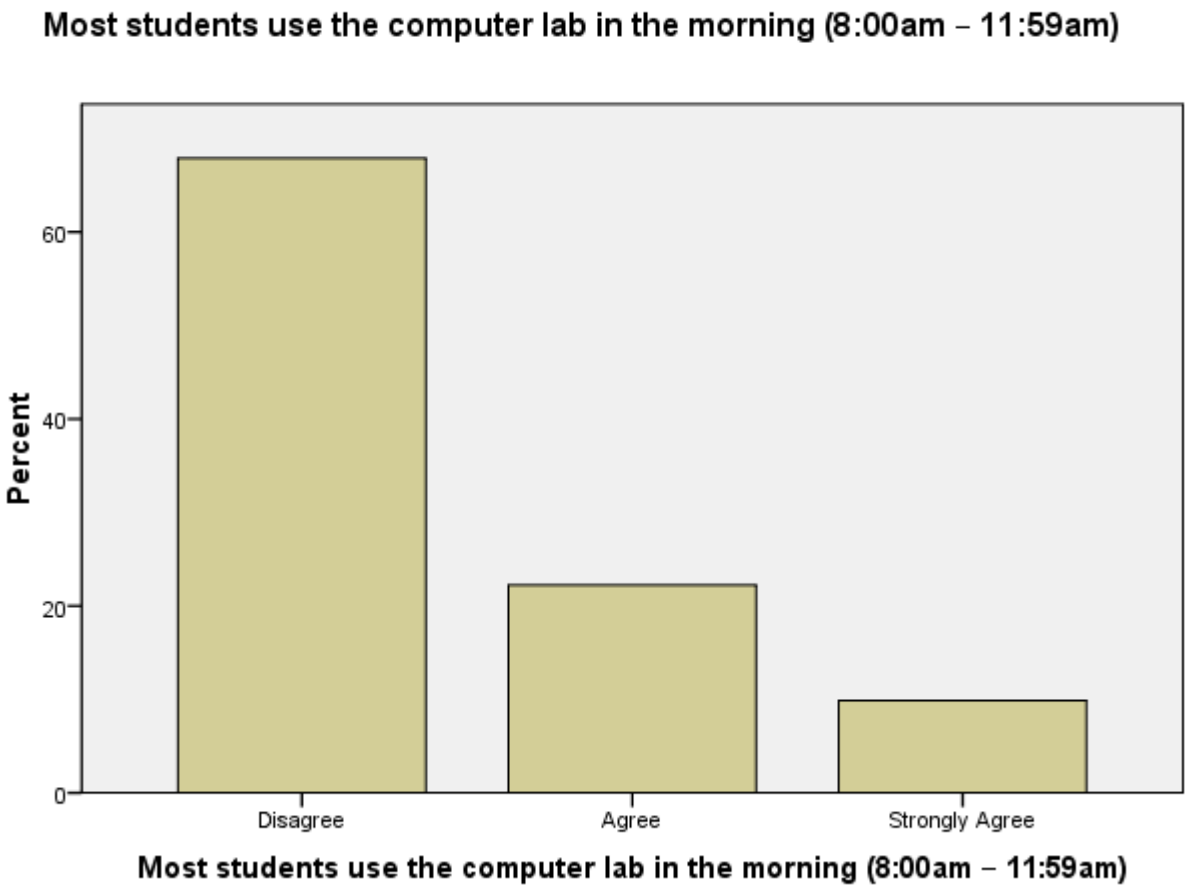
	%	Mean	Std. Deviation	Interpretation
Students are free to use the computer lab all day time (from 8:00am - 10:00pm)	**55.2**	2.2140	.41097	Agreed
Most students use the computer lab in the morning (8:00am – 11:59am)	**60**	2.4198	.66552	Agreed
Most students use the computer lab in the afternoon (12:00pm – 3:59pm)	**47.2**	1.8971	.76717	Disagreed
Most students use the computer lab in the evening (4:00pm – 6:00pm)	**67.5**	2.7078	.45570	Agreed
Most students use the computer lab at their preparation time (8:00pm – 10:00pm)	**31.2**	1.2562	.43744	Strongly Disagreed

Source: Field data (2022)

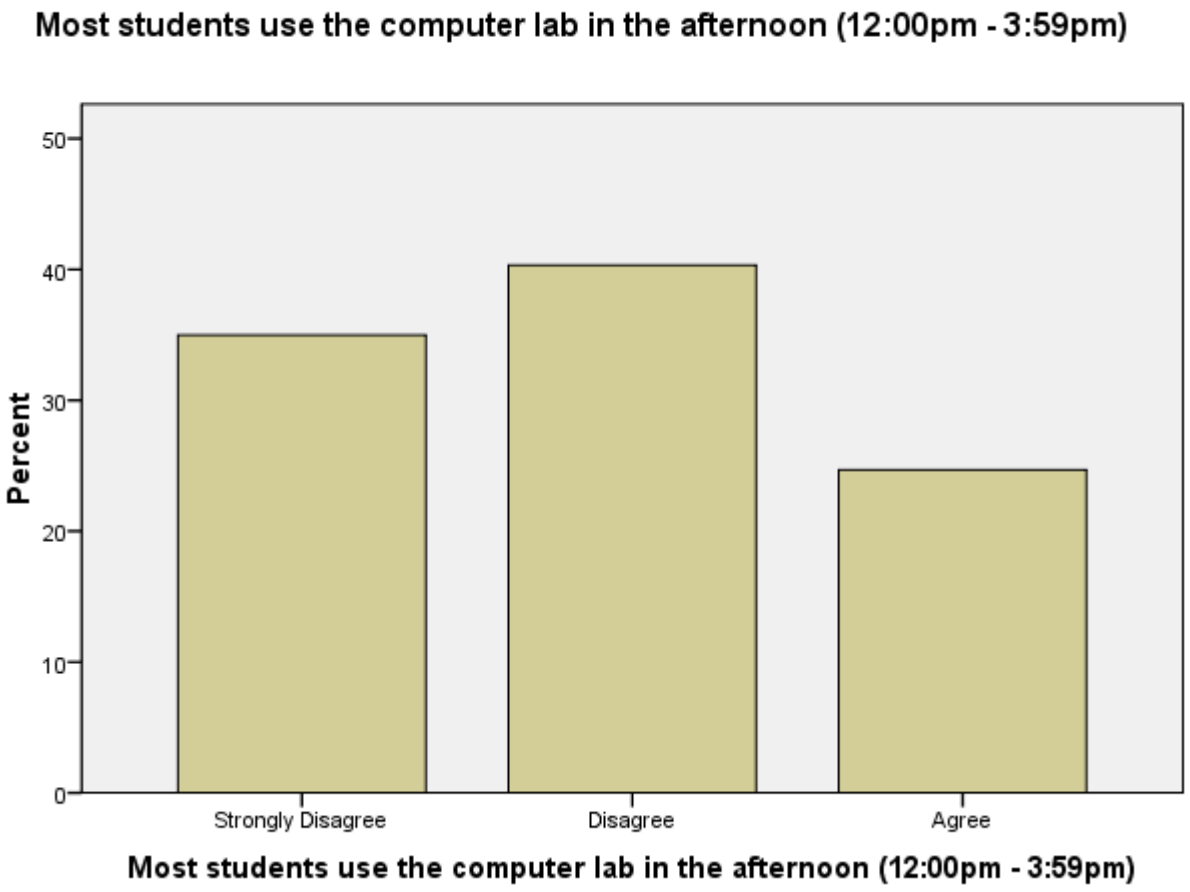
Graph 4.3.1: Students are free to use the computer lab all day time (from 8:00am - 10:00pm)



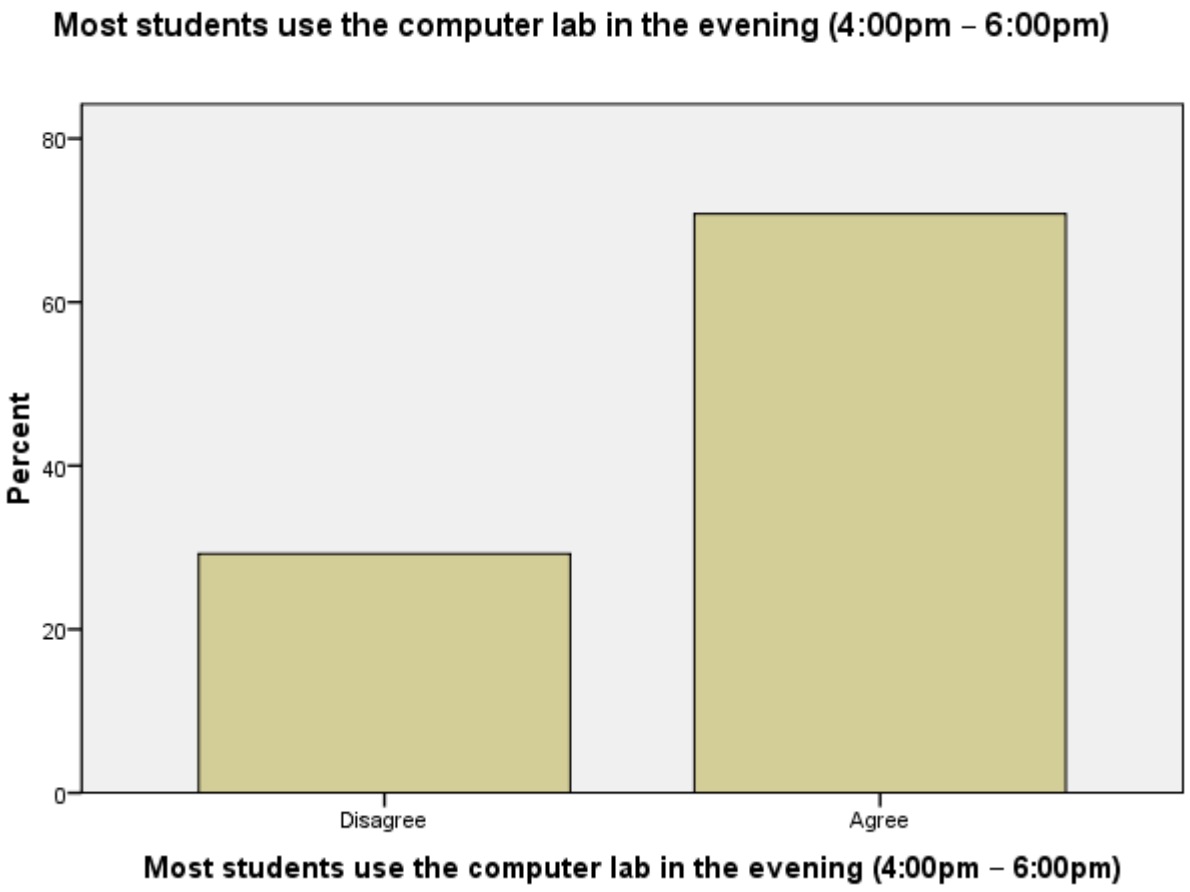
Graph 4.3.2: Most students use the computer lab in the morning (8:00am – 11:59am)



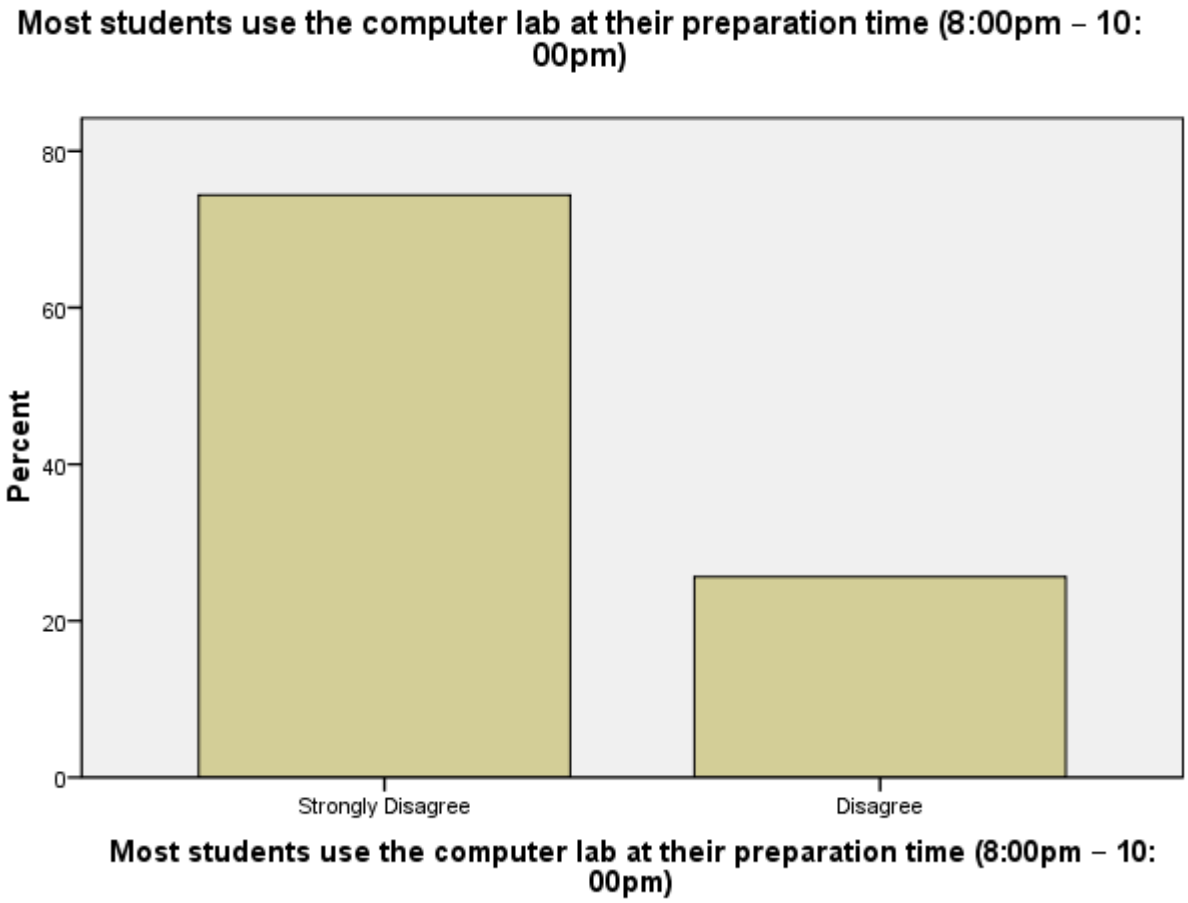
Graph 4.3.3: Most students use the computer lab in the afternoon (12:00pm – 3:59pm)



Graph 4.3.4: Most students use the computer lab in the evening (4:00pm – 6:00pm)



Graph 4.3.5: Most students use the computer lab at their preparation time (8:00pm – 10:00pm)



As summarized in table 4.7 and graphs 4.3.1 to 4.3.5 above results revealed that, majority of the respondents agreed that students are free to use the computer lab all the day from 8:00am - 10:00pm (Mean = 2.2) or 55.2% and few respondents agreed that most students use the computer lab in the morning from 8:00am – 11:59am (Mean = 2.4) or 60%. Further results show that, other respondents disagreed that students use the computer lab in the afternoon from 12:00pm – 3:59pm (Mean = 1.8) or 47.2% and other respondents agreed most students use the computer lab in the evening from 4:00pm – 6:00pm (Mean = 2.7) or 67.5% and some respondents strongly disagreed

that students use the computer lab at their preparation time from 8:00pm – 10:00pm (Mean = 1.2) or 31.2%.

These findings imply that in the schools where computer laboratories as well as ICT teachers are available, students use computer labs at evening time from 4:00pm – 6:00pm. Fewer schools allow their students to use the computer labs in the morning from 8:00am – 11:59am.

Liverpool et al. (2010) observed that e-learning is dynamic for both instructors and students as a medium of learning the materials since it is used constantly as a technique to carry out learning contents and components in Nigeria's Higher Education Institutions.

E-learning, according to Kajetanowtez and Wierzejewski (2010), is a dynamic method that enhances self-study, ongoing testing, and assessments that spur honest scrutiny of educational development and patchy success. According to a literature review, e-learning has a positive impact on students' achievements. This technological method helps students develop their innovative thinking (Garrison, Anderson 2003 & Eze et al., 2018). E-learning has many advantages for organizations, facilitators, and instructors, including time savings, aiding in institution image projection, encouraging staff knowledge advancement, enhancing the efficiency of teaching and learning, and promoting adaption. As a result, e-learning should not be time-limited (Eze et al., 2018).

Richmond asserts that there are connections between educational initiatives and ICT. Through a presentation, the use of information-using tools, the use of instructional modules, and the use of online encyclopedias and electronic diaries, technology can affect learning. But in industrialized nations, where many institutions view e-learning activities as a way to expand and enhance their institutions, e-learning has seen widespread adoption as a teaching tool. Additionally, it's concerning

to see how teaching techniques are evolving in the twenty-first century. The development of the Internet and the incorporation of technologies as a way of life have also altered how teaching is done in HEIs, particularly in developed nations. Today, blended learning techniques—which combine traditional face-to-face learning with e-learning—have gained popularity. There should be an equal amount of time available for both traditional face-to-face instruction and online instruction for teachers and students. For higher academic results, all methods need enough time.

Olojo et al. (2019) argue that e-learning has evolved from the traditional technique of teaching and learning to a modern-driven, synergistic, personalized, and adaptive teaching and learning approach that involves learners' facilitators and instructors (Falana, 2017). The old approach to learning was thought to be teacher-focused, whereas the learner focus is on technology that help students distribute and access knowledge often and continuously. In order to promote teaching and research, e-learning addresses fundamental and synergistic PC-supported scholarly process and assessment methodologies (Eze et al., 2018). This empowers students and teachers to exchange learning materials created in a standardized format. Regardless of the amount of time available, e-learning is an essential method that every institution should incorporate into the current learning and education technique for both students and community-oriented learning (Falana, 2017).

Markus and Robey (2018) claim that mentoring and learning are frequently carried out by students utilizing a computer as part of a technology-facilitated learning process using digitally transmitted content and coaching help. Therefore, students require enough time for the e-learning to become fruitful in all academic institutions including secondary schools. Institutions should avoid the allocation of little time for e-learning and provide much time for face-to-face teaching strategies.

In the study area most schools allow their students to use computer labs at the evening time. But from literatures it has been noted that, for the e-learning to become efficient, much time is needed. The evening time alone is not enough.

In the interview one respondent said,

"In our school, teachers and students are not allowed to use the computer laboratory all the time. But the time table has provided 80 minutes a day to use the lab. This makes e-learning to be difficult as the time is too short to enable us familiarize well with the e-learning facilities".

4.2.3 Testing of Assumptions of the Model: Multiple Regression Analysis

Before running the model, the researcher was interested in understanding the extent to which the data fits the general population (Field, 2014), in that case, assumptions such as correlation, regression analysis and normality were tested.

4.2.3.1 Correlation Analysis

In phase one, the correlation matrix was built. The correlation matrix shows the relationships between each variable. In this stage, factors with weak links to other variables are eliminated. It is used to determine which factors are statistically significant and to assess the factorability of the correlation matrix.

The goal of the analysis was to group the variables, not the respondents, hence R-type factor analysis was used. The component matrix for 15 variables is displayed in the correlation matrix (Table 4.8).

A statistical method called correlation can be used to determine if and how strongly two variables are related to one another. The linear relationship between two or more variables is measured. It's critical to understand the "magnitude" or "strength" of the correlation as well as its importance in

order to assess the correlation between variables. There are many alternative correlation methods, but Pearson r, also known as linear or product moment correlation, is the sort of correlation coefficient that is most frequently utilized.

The correlation coefficient (r), which runs from -1.0 to +1.0, is the primary outcome of a correlation. The more closely the two variables are related, the closer r is to +1 or -1. A perfect negative correlation is represented by a value of 1.0, while a perfect positive correlation is represented by a value of 1.0. A correlation is absent when the value is zero (0.00). If r is positive, then if one variable increases, the other must also increase. On the other side, if r is negative, it denotes a "inverse" correlation, where as one variable increases, the other decreases.

The correlation between the variables is shown in Table 4.12. When the dependent and independent variables are correlated, they are related to one another. Such a correlation may be positive or negative, denoted by +1.00 or -1.00 respectively. A two-tailed Pearson correlation test was utilized in this investigation. Table 8 below displays both independent and dependent factors. The results demonstrated a positive and substantial connection between the independent variable, i.e., e-learning variables, and the use of e-learning systems. The correlation coefficient was found to be 0.716 at a sig level of 0.01 (<0.05).

Table 4.8: Correlation matrix

		E-Learning system usage	E-learning factors	Degree of Teacher's usage	Student's e-learning access time
E-Learning system usage	Pearson Correlation	1			
	Sig. (2-tailed)				
E-learning factors	Pearson Correlation	.659**	1		
	Sig. (2-tailed)	.000			
Degree of Teacher's usage	Pearson Correlation	.659**	1.000**	1	
	Sig. (2-tailed)	.000	.000		
Student's e-learning access time	Pearson Correlation	.765**	.716**	.716**	1
	Sig. (2-tailed)	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Field data (2022)

The magnitude of the coefficients of the independent variables also denoted the strength of the influence that they have on the dependent variable. The results indicate that e-learning system usage is strongly influenced by E-learning factors (coefficient 0.659), Degree of Teacher's usage (coefficient 0.659) and Student's e-learning access time (coefficient 0.765).

4.2.3.2 Regression analysis

This subsection presents the regression analysis results for factors contributing to e-learning system usage.

4.2.3.2.1 Strength of the Regression Model

The model summary in Table 4.13 reveals that the R Square value for the coefficient of determination (the proportion of variation in the dependent variable that can be accounted for by changes in the independent variables) is 0.821. As a result, e-learning elements, teacher usage

levels, and student access times account for 82.1% of changes in the use of e-learning systems. The model for using e-learning systems is suggested to be significant at the 95 percent level of significance by the P- value of 0.000 (less than 0.05).

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.821	.880	.53627	.821	3.206	5	109	.000
a. Predictors: (Constant), E-learning factors, Degree of Teacher's usage and Student's e-learning access time.									

ANOVA was employed in the study to determine the regression model's significance, from which an f-significant value of p 0.05 was calculated (p=0.000 <0.05). The model successfully predicts how e-learning characteristics, teacher utilization levels, and student access times affect the use of e-learning systems. This demonstrates that the regression model's likelihood (probability) of making an incorrect forecast is less than 0.05. Thus, the results are highly reliable because the regression model has a confidence level above 95%. The sample F has a value of 32.06 using the F-test statistic, indicating that the regression model is statistically significant (F= 32.06, P<0.05). Therefore, this model can be applied to estimation needs.

Table 4.10: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.895	5	.179	3.206	.000[a]
	Residual	6.085	109	.056		
	Total	6.979	114			

a. Predictors: (Constant), E-learning factors, Degree of Teacher's usage, Student's e-learning access time

b. Dependent Variable: e-learning system usage

4.2.3.2.2 Regression Model

Regression analysis was used to determine the impact of e-learning elements, teacher utilization levels, and student access times on the district of Arusha's use of the e-learning system. To determine the association between the variables, the study used the regression equation shown as follows. $Y= \beta_0+ \beta_1X_1 + \beta_2X_2+ \beta_3X_3+\varepsilon$; where Y = e-learning system usage, β_0=the constant of regression, β_1, β_2 and β_3 = are the regression coefficients/weights of the following respective independent variables: X_1= E-learning factors, X_2= Degree of Teacher's usage, X_3= Student's e-learning access time and ε = error term. Utilizing the respondents' responses to each of the three independent variables, all three were measured. The amount of time spent using the e-learning system by students, teachers, and students themselves was measured.

Table 4.11: Coefficients of regression equation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	B		
1	(Constant)	.258	.443		.250	.030
	E-learning factors	.181	.115	.144	1.583	.001
	Degree of Teacher's usage	.087	.108	.076	2.803	.000
	Student's e-learning access time	.030	.055	.051	3.549	.004
a. Dependent Variable: e-learning system usage						

Based on the conducted multiple regression analysis to determine the relationship between independent variables and dependent variable, the established multiple linear regression equation becomes:

$Y = 0.258 + 0.181X_1 + 0.087X_2 + 0.030X_3 + 0.443$

Were

Y = E-learning system

X_1 = E-learning factors = 0.181

X_2 = Degree of Teacher's usage = 0.087

X_3 = Student's e-learning access time = 0.030

β_0 = Regression constant = 0.258

From the regression equation above, taking all the predictor variables constant (zero), the dependent variable is 0.258. Further, the regression equation above shows that the coefficient (β_1) E-learning factors (0.181) which imply that one-unit change in E-learning factors results in 0.181 units increase in e-learning system usage. Thus, E-learning factors have a strong positive effect on e-learning system usage. Similarly, one-unit change in Degree of Teacher's usage results in 0.087 units increase in e-learning system usage. Furthermore, one-unit change in Student's e-learning access time results in 0.030 units increase in e-learning system usage.

The positive regression coefficient indicates that there is a positive relationship between the independent variables (E-learning factors, Degree of Teacher's e-learning usage and Student's e-learning access time) and dependent variables (e-learning system usage).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter offers a summary, judgments, and suggestions.

5.2 Summary

5.2.1 Summary of the results of the first specific objective

Results revealed that, majority of the respondents agreed that students are free to use the computer lab all the day from 8:00am - 10:00pm (Mean = 2.2) or 55.2% and few respondents agreed that most students use the computer lab in the morning from 8:00am – 11:59am (Mean = 2.4) or 60%. Further results show that, other respondents disagreed that students use the computer lab in the afternoon from 12:00pm – 3:59pm (Mean = 1.8) or 47.2% and other respondents agreed most students use the computer lab in the evening from 4:00pm – 6:00pm (Mean = 2.7) or 67.5% and some respondents strongly disagreed that students use the computer lab at their preparation time from 8:00pm – 10:00pm (Mean = 1.2) or 31.2%.

5.2.2 Summary of the results of the second specific objective

Findings revealed that, majority of the respondents agreed that, teachers use their free time to visit the computer laboratory (Mean = 2.2) or 56.7%. Some respondents disagreed that teachers use computer lab for the preparation of their lessons (Mean = 2.0) or 50.2%. Further results showed, some respondents strongly disagreed that teachers use e-learning to prepare and administer home works and assignments to their students (Mean = 1.4) or 36.5%. More results showed that, respondents agreed that, School Management does not allow teachers to frequently use the computer laboratory for their works (Mean = 2.5) or 62.5% and some respondents disagreed that

most of the teachers use computer for the preparations of examinations and storage of exam results (Mean = 1.9) or 49.3%.

5.2.1 Summary of the results of the third specific objective

Results indicated that majority of the respondents agreed that students are free to use the computer lab all the day from 8:00am - 10:00pm (Mean = 2.2) or 55.2% and few respondents agreed that most students use the computer lab in the morning from 8:00am – 11:59am (Mean = 2.4) or 60%. Further results show that, other respondents disagreed that students use the computer lab in the afternoon from 12:00pm – 3:59pm (Mean = 1.8) or 47.2% and other respondents agreed most students use the computer lab in the evening from 4:00pm – 6:00pm (Mean = 2.7) or 67.5% and some respondents strongly disagreed that students use the computer lab at their preparation time from 8:00pm – 10:00pm (Mean = 1.2) or 31.2%.

5.3 Conclusion

The study aimed to assess the factors influencing Reneal e-learning system usage in government secondary schools in Arusha District. Despite of few barriers which have been discussed, the research findings have shown that, the usage of e-learning system in secondary schools is significant as it saves time and man power. The use of e-learning system makes the learning process to be interesting to both students and teachers. But in the study area it has been found that, e-learning is not widely used in public secondary schools. This is due to many factors including insufficient number of ICT teachers located to teach in public secondary schools. Other factors include the unavailability of computers and power supply in many schools especially those found in rural areas. Teachers and students have low access to computer use in most schools. As a result, e-learning usage is significantly low in many public secondary schools in Arusha District.

5.4 Recommendations

From the conclusions made above, recommendations were made that;

i. It should be a top priority for the Ministry of Education and Vocational Training to hire more ICT instructors in public secondary schools. This is crucial for enabling the use of e-learning.

ii. Policy makers should make sure that policies related to education must openly indicate how e-learning should be adopted and used in secondary schools.

iii. Schools should put much emphasis in increasing teachers and students to have access to computer laboratories, and give much time in a week for both teachers and students to use computer laboratories.

5.5 Further Research

The current study aimed to assess the factors influencing Reneal e-learning system usage in government secondary schools in Arusha District. Further studies can be conducted to examine the causes of insufficient number of ICT teachers in most public secondary schools in Arusha District.

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APPENDIX I

RESEARCH BUDGET

S/N	ACTIVITIES	ITEMS	COST (TSHS)
1	Proposal Preparation	Internet services	20,000/-
		Typing and printing	50,000/-
		Photocopies	50,000/-
		Binding	30,000/-
		Transport	20,000/-
		Meals	50,000/-
		Validity & Reliability	100,000/-
		Sub- total	**320,000/-**
2	Data Collection	Printing and photocopies	50,000/-
		Transport	200,000/-
		Meals	150,000/-
		Sub- total	**320,000/-**
3	Data Processing and Report writing	Printing and photocopies	250,000/-
		Transport	50,000/-
		Binding	40,000/-
		Meals and accommodation	80,000/-
		Publishing	150,000/-
		Sub- total	**720,000/-**
		Grand Total	**1,440,000/-**

APPENDIX II

RESEARCH TIME FRAME

Activities	Dates (Year, 2022)						
	April 2022	May 2022	June 2022	July 2022	Aug 2022	Sept 2022	Oct 2022
Topic Preparation							
Proposal Preparation							
Proposal presentation (Defense)							
Data collection & Analysis							
Research Report Preparation							
Research Report Presentation (Defense)							
Submission of bound books							

APPENDIX III

QUESTIONAIRE FOR TEACHERS

Dear respondent, you are requested to participate in a study entitled "To assess the factors influencing reneal eLearning system usage in government secondary schools in Arusha District" by Mr. Erick Macky, a Master Degree Student from the Institute of Accountancy Arusha. Please provide true information. Responses you provide will be treated with utmost confidentiality. Do not fill your name in this questionnaire.

PART A. DEMOGRAPHIC INFORMATION: Please tick appropriate option

1. Your gender ( ) Male ( ) Female
2. Education level ( ) Certificate ( ) Diploma ( ) Bachelor degree ( ) Master degree
3. Job experience ( ) 1 – 2 years ( ) 3 – 5 years ( ) Above 6 years
4. Teaching subjects ( ) Art subjects ( ) Science subjects ( ) ICT subjects

PART B: RESEARCH SPECIFIC OBJECTIVES

(1) Factors that influence the usage of the Reneal e-Learning system

Statements	Strongly disagree	Disagree	Agree	Strongly Agree
Students visit the computer lab regularly				
School management give priorities to students to use computer laboratory				
Students are interested with the use of reneal e-learning system				
There are sufficient ICT teachers to facilitate an e-learning system in the school				
Teachers use computer laboratory in teaching their subjects				

(2) How frequent teachers use Reneal e-learning system

Statements	Strongly disagree	Disagree	Agree	Strongly Agree
Teachers use their free time to visit the computer laboratory				
Teachers use computer lab for the preparation of their lessons				

Teachers use eLearning to prepare and administer home works and assignments to their students				
School management does not allow teachers to frequently use the computer lab				
Most teachers use computer for the preparations of examinations and storage of examination results				

(3) Time students usually access the Reneal e-learning system

Statements	Strongly Disagree	Disagree	Agree	Strongly Agree
Students are free to use the computer lab all the day time (8:00am – 10:00pm)				
Most students use the computer lab in the morning (8:00am – 11:59am)				
Most students use the computer lab in the afternoon (12:00 pm – 3:59 pm)				
Most students use the computer lab in the evening (4:00 pm – 6:00 pm)				
Most students use the computer lab during their preparation time (8:00 pm – 10:00 pm)				

THANK YOU FOR YOUR PARTICIPATION!

APPENDIX IV

INTERVIEW QUESTIONS FOR TEACHERS

1. Do you have a computer laboratory in your school? ( ) Yes ( ) No

2. If the answer in 1 above is yes. What are the major uses of the computer lab that you have?

   i. ……..
   ii. ……..
   iii. ……..

3. Are you familiar with the Reneal e-learning system? ( ) Yes ( ) No

4. Explain how you employ the Reneal e-learning system in your teaching

   i. ……
   ii. ……..
   iii. ……..
   iv. ……..

4. (a) Do you have ICT teachers in your school? ( ) Yes ( ) No

   (b) If the answer in 4a above is No, who assists students in computer application learning?

   i. ……..
   ii. ……..
   iii. ……..
   iv. ……..

5. What obstacles (if any) prevent you from using Reneal e-learning system in your institution?

   i. ……
   ii. ……
   iii. ……
   iv. ……

THANK YOU FOR YOUR PARTICIPATION!