

**STAKEHOLDERS' PERCEPTIONS ON ADOPTION OF
BLENDED LEARNING APPROACH IN SELECTED
SECONDARY SCHOOLS IN MOROGORO MUNICIPALITY**

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BLENDED LEARNING APPROACH IN SELECTED
SECONDARY SCHOOLS IN MOROGORO MUNICIPALITY**

By

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**A Dissertation Submitted in Partial Fulfilment of the Requirements for the
Award of Master of Arts in Education (MAED) of Mzumbe University**

2020

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommended for acceptance by the Mzumbe University, a dissertation entitled ***Stakeholders' Perceptions on Adoption of Blended Learning Approach in Selected Secondary Schools in Morogoro Municipality***, in partial fulfilment of the requirements for the award of Master of Arts in Education at Mzumbe University.

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DEDICATION

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ABBREVIATIONS

BLA	Blended Learning Approach
ICT	Information Communication Technology
MBA	Master of Business Administration
MEO	Municipal Educational Officer
MSEO	Municipal Secondary Educational Officer
PEDP	Primary Education Development Programme
SEDP	Secondary Education Development Programme
SPSS	Statistical Package for Social Science
UDSM	University of Dar es Salaam
UNESCO	United Nations Educational, Scientific and Cultural Organizations
URT	United Republic of Tanzania
VET	Vocational Education Training

ABSTRACT

The study explored the stakeholders' perceptions on the adoption of blended learning approach (BLA) in selected secondary schools in Morogoro Municipality, Tanzania. Specifically, the study aimed to: determine stakeholders' knowledge and attitude on the adoption of blended learning approach in selected secondary schools; examine the learning environments which support the adoption of BLA in selected secondary schools; assess the extent to which the BLA is used in teaching and learning in selected secondary schools. The study employed a mixed-methods research approach and a case study design. A sample size of 74 respondents from two selected secondary schools was used to inform this study. Interviews, participant observation, questionnaires and documentary review were used to collect data. Quantitative data analysis was mainly descriptive and was done by the Statistical Package for Social Sciences (SPSS), while the thematic content analysis was employed to analysis qualitative data.

Findings reveal that stakeholders perceived the BLA as a teaching model of combining traditional and modern methods. It involves the use of computers, internet, projectors that help to provide appropriate learning materials within a limited learning time. Also, stakeholders had positive attitudes towards the contribution of BLA on students' meaningful learning. Moreover, it was found that BLA exposed students to real objects that support fast understanding, hence motivated learning through the use of audio-visual materials. The findings further show that the learning environment in the selected secondary schools was supportive to the adoption of blended learning. The application level of BLA was 60%., furthermore, two-third of the teachers were trained to use BLA. In conclusion, BLA is perceived to improve academic achievement through learning thus, the resolution to the challenges would promote its application in the classroom. It is commended that the government install necessary facilities that could support the use of BL in schools as per the curriculum demands.

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CHAPTER ONE

1.1 Introduction

The major focus of the study was to explore stakeholders' perceptions on the adoption of blended learning approach in secondary schools. This chapter presents background to the problem, problem statement, objectives of the study, research questions, significance of the study, scope, limitations of the study and definitions of key terms.

1.2 Background to the study

The blended learning is an outcome of the initiatives to integrate ICTs in learning process as a method of teaching and learning rather than a subject. The emphasis was put on the use of e-learning, cloud computing and mobile models of teaching and learning. The learning models focus on making the learning system more active and interactive between learners and teachers. Massive improvement on discipline of information and Communication Technology (ICTs) are taking the lead on rapid shift and changes in the process of teaching and learning in the education sector. The approach encompasses collaborative platforms, webinars, interactive audiovisual and internet connection embed in the learning process (Zhu, 2017). Blended learning in developing countries was furthered by the increased comprehensive adoption of ICTs in higher education (Roblyer, 2006; Machumu, Almasi &Zhu, 2017).

It is no doubt that the need to improve students' achievements in education carries the central part of most government in the world. The only difference is on the means to achieve the target. Scholars interested in learning and teaching methodologies are always at work to find out the best means to reposition schools as premium sources of knowledge and capacity building to students (Fullan, 2012; Lynch *et al.*, 2015). The application of the teaching and learning model that integrate teachers and students in an interconnected way while each finds its part to play was sought to be best by blending the traditional and modern methods within the realm of information technologies (Zhoa, 2012; Uzunboyly & Karagozlu, 2015).

The concept of BL originates from the idea that learning is not just a time event since it is a progressive process (Singh, 2003). Blended learning is defined as a combination of traditional face-to-face instruction and online learning activities (Bonk & Graham, 2006; Machumu, Almasi& Zhu, 2017). Adas and Abu (2011) look at blended learning as a method that creates a suitable educational environment for students and teachers. Usta (2007) defines BL as a kind of learning that is comprised of a traditional face to face method and the ICTs models like e-learning and mobile learning.

The use of blended learning in school was associated with the enhancement of students' effective learning, motivation and satisfaction (Felvégi & Matthew, 2012). Other scholars argue that the learning process that involves the use of e-books, televisions, internet, e-readers, newspapers, films, radio textbooks and websites improve the quality of learning and result to effective education delivery(Kihoza, Zlotnikova, Bada & Kalegele,2016). Moreover, blended learning exposes student and teacher to the outer and higher horizons which are far beyond the traditional hook of the book-teacher model where learning should be necessarily limited to the classroom (Felvégi& Mathew, 2012). In other words, the application of blended learning was conceived to be much more flexible in representing content through the use of different styles that can enhance learning.

Additionally, underscoring the importance of blended learning model in enhancing knowledge, innovation and learner effectiveness, different countries have adopted the model in their country curricula content. The adoption of BL in the education curricula implies that the country level of using ICT technology was advanced. Different countries like the United States of America, Chile and Malaysia had managed to adopt the model and integrated it in the education curriculum for the lower education levels.

Countries like Malaysia put attention in e-Learning in school as segment of the government vision 2020. According to Egidio *et al.* (2011), there were several initiatives incorporated in ICTs that were implemented in Malaysian smart schools in 1997. The analysis of Malaysia exposed that proper training and support, even to adult teachers were able to successfully integrate e-learning into their teaching practices (Lau & Sim, 2008). Evidence could be drawn from Chilean government that reformed its education system hence leading to the introduction of ICT in secondary schools (Hinostroza *et al.*, 2005). The focus of the Chilean policy reforms managed to transform the school culture thereby integrating ICT in Teaching and learning approaches from other schools. The practice increased within Chile and expanded to other organisations like UNESCO and World Bank, since it portrayed a positive outcome like impartment of school climate, increased opportunities for professional development and positive effects on teaching and learning processes (Egidio *et al.*, 2011).

In Africa, most of the countries have developed ICT policies and integrated e-learning (Kihoza, 2016). Also, the increase in adoption of information communication technologies has caught the interest of various stakeholders such as curriculum designers, teachers, academicians, administrators, parents and students in various educational institutions (Ngonyani, 2014). Likewise, countries that form the union of the East African community have portrayed tremendous progress in the adoption of ICT (Lo *et al.*, 2011). A country like Rwanda has turned to be the leading nation in the EAC on responding to the demands of the 21st century by enhancing the combination of technology with face-to-face instruction (Boitshwarelo, 2009). The development of ICT activated significant advancement in teaching and learning. In order to make education to be of quality investment, ICT is an inescapable issue (Olgun, 2009). Blended learning can encourage learner's creativity and simplify learning environment in order to enhance their self-discipline and motivation (Wicks & Kinsella, 2009). Lo *et al.* (2011) hold that when students use blended learning, their perceived level of deep thinking and problem-solving becomes higher.

In Tanzania, the adoption of blended learning approach came as a result of the establishment of information and technology policy in 2007(URT, 2007). The ICT policy went further to integrate educational content for primary and secondary schools, teacher training education colleges and adult education institutes with the use of modern ICT tools (Hare, 2007). The development of the ICT policy for basic education facilitated the integration of curriculum and content in the modern pedagogy of teaching and learning. In fact, the policy states clearly that, ICT should be taught as a subject, and it should be integrated as a model or instrument for learning and teaching other subjects in primary and secondary schools(URT,2007). Further elaboration was put forth to emphasise the importance of applying the ICT infrastructures as a means to improve teacher-student interaction in the classroom.

In Tanzania, PEDP (2007-2011) and SEDP (2016/17-2020/21) emphasise ICT based information management in primary, secondary and teacher training colleges (URT, 2010). The establishment of ICT subject in schools gave rise to application of Blended Learning by 2015 (URT, 2016). The general role of these policy frameworks acknowledge the use of ICT devices in education in order to improve the quality of education and help to raise awareness on the benefits and the potential gains in adopting ICT in the education sector which in turn raise ICT to priority area in education planning (Hooker *et al.*, 2011).

Moreover, the use of ICT in secondary schools has shifted teachers from traditional methods to modern method of teaching due to the advancement of technology and the internet (Elliot, 2009). ICT facilitates networking of teachers and improves the teaching approaches and methods (Olgun, 2009). Despite impressive policy statement, and recorded efforts, the establishment and integration of the ICT policy in the education sector has not produced the intended results of improving school implementation of blended learning among teachers. It was expected that the application of blended learning would have spread all over the schools in the country but that seemed to be far from reach in Tanzania. Kalegele *et al.* (2016) claimed that the practice of blended learning approach in primary and secondary schools was

found to make teacher uncomfortable in teaching. This suggests that either teacher were not conversant with technologies or media that should be used to teach their student, or the school lacked conducive infrastructures which could facilitate the application of BL in teaching and learning.

Empirical evidence from former research witnessed that the level of teachers to apply ICT technology in school was too minimal to facilitate the integration of traditional method and modern information technology in classroom teaching (Ndibalema, 2014). The deployment of ICT in secondary schools in Tanzania is not fully realised in teaching and learning (Kalegele *et al.*, 2016). There are no clear and sufficient reasons that are brought forth to explain about observed findings. If the Blended Learning approach is to date the ideal method of teaching that schools should adopt then, the need to uncover the unknown reasons for poor utilisation of BL in school is highly demanded. It was against this background that the study found its motivation to investigate the stakeholders' perceptions of the adoption of blended learning in secondary schools.

1.3 Statement of the Problem

Integration of a blended learning approach in the education system is regarded to be an effective approach in dispensing knowledge and innovation to students and teachers (Keane, Keane, & Blicblau, 2014). Learners exposed to ICTs have the option to use of multiple sources of knowledge to develop skills, self-esteem, critical thinking and networking (Jia *et al.*, 2013; Pankin, Roberts & Savio, 2012). Teachers profited from the use of blended learning approach since it enhances the application of traditional and modern teaching methods. The blended learning can either be used in the classroom or outside, online or offline and thus proves to be the most flexible method of teaching and learning compared to the traditional approach which is bound to the four corners of the classroom (Saliba, Rankine & Cortez, 2013).

Cognisant of the utility of adopting BL approach in the education system, the government of the United Republic of Tanzania deliberately integrated the content of the curriculum in primary and secondary schools with that of ICTs. The need was to

assure that a student is taught on the application of ICT facilities and make ICT as an instrumental component among the teaching and learning process in a blended form (URT, 2007; Ndibalema, 2014).

However, the policy decisions that the government undertook did not seem to actualize, since in many school teachers are still attached to the use of traditional methods of teaching (Egidio *et al.*, 2011; Raphael & Mtebe, 2013; Machumu & Zhu, 2019). Many schools are yet to install devices that support the application of BL, and thus making the approach as alien to many teachers and students. Whereas the school curriculum sought to promote students and teachers to practice Blended Learning approach in learning and teaching, its practical implementation was found to be poor. Under this juncture of discrepancies, the study explored stakeholder's perceptions of the BL implementation in the school. The central question being "does the blended learning conceived to be an adequate approach for teachers in secondary schools?"

1.4 Objectives of the Study

1.4.1 General Objective

The main objective of the study was to assess stakeholders' perceptions on adoption of blended learning approach in selected secondary schools in Morogoro Municipality.

1.4.2 Specific Objectives

The following specific objectives guided the study:

- a) To explore stakeholders' knowledge and attitudes towards the adoption of blended learning approach.
- b) To examine the learning environment for the adoption of blended learning approach; and
- c) To assess the extent to which blended learning approach is used in secondary schools.

1.5 Research questions

- a) What are stakeholders' knowledge and attitudes of the adoption of blended learning approach in secondary schools?
- b) How does school learning environment support the adoption of blended learning approach?
- c) To what extent is blended learning approach used in secondary schools?

1.6 Significance of the study

The study was deemed useful to the field of education because blended learning is one of the best approaches employed to provide meaningful learning experiences as it expands knowledge. The concepts of blended learning need to be understood from the perspective of education stakeholders such as teachers and students in secondary schools around Tanzania. The findings of this research implicate different stakeholders in various ways as follows.

Theoretical Significance

The study explored on stakeholder's perceptions on adoption of blended learning in secondary schools in Morogoro Municipality focusing on the attitudes, perceptions and opinions. The findings create awareness on the importance of involving teachers and other stakeholders at the grassroots level in adopting blended learning. Additionally, results of the study add knowledge to the present literature on blended learning. Further, the findings serve as point of reference for academicians devoted to the subject of blended learning and therefore it would influence the creation of new knowledge among students in schools.

Practical significance

The findings impact on the way blended learning is implemented in teaching secondary schools in Morogoro Municipality. The study is also important for educators who want to learn more about the use of blended learning in teaching and learning. The findings and recommendations of the study call upon the government leaders especially in positions of decision making to improve school conditions thereby installing devices that could support the use of Blended learning. To

curriculum developers, the study has ushered a call to make the BL approach more practical to support online classes at secondary schools.

1.7 Scope of the Study

The study focused on government secondary schools that have ICT infrastructures. It also involved some education stakeholders like teachers, students, educational officers, head teachers and quality assurers who are experienced on blended learning. It was conducted in Morogoro Municipality since it could not be easy to conduct a study in the whole country due to time factor, size and geographical distribution of the population. Also, Morogoro Municipality was accessible, and this made the researcher assume that its accessibility had effects on educational development.

1.8 The Limitations of the Study

In the course of developing the study proposal, several limitations were foreseen by the researcher. The first was on the possibility of getting the right respondents who could be knowledgeable and ready to provide the required information and data for the study. The second limitation was related to population validity since the study collected data from two secondary schools that had profited from the project of ICT infrastructure installation. The other predetermined limitation was related to the time factor for the conduct of the study.

These limitations were effectively addressed by a choice of plausible research design, sampling techniques and method of data collection as to complement the findings. The study used the case study design to seek for detailed information from purposively selected key informants and by the use of stratified sampling techniques to avoid the bias of the researcher on the selection of the large group of respondents. The observation and documentary methods were used to complement the findings of the major used methods of data collection.

Also, during data collection, a large number of teachers were in their midterm break. Thus, the researcher waited until the schools resumed for the break to proceed with data collection.

1.9 Definitions of Key Terms

Perception: According to Macmillan English Dictionary for Advanced Learners (2007). The word perception comes from the verb 'perceive' that means to 'understand' or 'think' about something in a particular way. It is a particular way of understanding or thinking about something. Also, it refers to the understanding, thinking and philosophical underpinning certain aspects or ideas. In this study, perception refers to how stakeholders think, understand, see and are knowledgeable of certain phenomena regarding Blended Learning.

Blended learning: It is a construct that elaborate on the approaches of teaching and learning by integration of old and new teaching methodologies in a meaningful way more than using single technique for instruction delivery (Lo *et al.*, 2011). It is also, regarded as a training system where some of the course contents are delivered at a distance, normally through Internet, and it as well involve physical presence in the classroom contexts. In this study, blended learning is referred to an approach used in teaching and learning that combines face-to-face and e-learning delivery methods.

Blended Learning Approach: It is an integrated instructional method that embeds classroom and face to face interactions and online learning activities (Singh, 2009). The incorporation of old and new techniques stimulate students to be active and it brings about a shift to student-centred learning. The application of BL catalyses the relationship between learner and instructor since there are different ways of participation. Indeed, the approach facilitate teachers to apply a wide range of techniques that could bring students closer to the subject hence creating sense of interest to learners (Lo *et al.*, 2011). Different ICT initiatives help teachers to preparer topics and present them through online medium and classroom sessions so as to engage students in interactive activities in the classes through discussion, debate and oral presentations (Machumu & Zhu, 2019). On the other hand teachers are free to provide feedbacks for clarity, additional and improvement without being tied with time and space.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents a review of relating literature to the study. It includes theoretical frameworks and empirical reviews as well as a conceptual framework. The theoretical review conceptualizes key concepts for the study and describes the underlying theory for the study. Likewise, the empirical review section contained the discussion of different research studies that have focused on the relevant issues relative to the specific objectives of the study. Having highlighted the theoretical and empirical frameworks, the chapter develops a synthesis of the empirical review by setting the research gap and thereafter the conceptual framework that demonstrates the paradigm to which the study variables were sought to be studied.

2.2 The Theoretical Literature Review

2.2.1 Conceptualizing Blended Learning

Scholars have conceptualised differently the term blended learning (BL). BL refers to amalgamation of the face to face technique of classroom learning and distance delivery systems executed by the ICT learning (Osguthorpe& Graham, 2003). Garrison and Kanuka (2004) view BL as an integration of old face to face classroom experience and online learning experience. Similarly, Rydeen (2011) underscores that the term Blended learning refers to a mixture of several contexts of learning approaches that provide a learner and a teacher with potential possibility to learn and teach effectively. Blended learning combines face to face classroom methods with online activities to form an integrated instructional approach. For Raphael and Mtebe (2013), blended learning is a combination of traditional face to face learning and computer-mediated instruction. In this study, blended learning refers to a combination of traditional face to face methods and ICT to form an integrated instructional approach. The combination of traditional and ICT inspires students to engage themselves in active learning and collaborative learning.

2.2.2 Advantages of Blended Learning Approach

The characteristics of blended learning focus on the incorporation of traditional forms of teaching (e.g. lecture) with active and highly customised individualised forms of learning using communications and information technology (Lo et al., 2011). Blended learning enhances learning because it combines the benefits of modern communications and information technologies with traditional lectures. Blended learning encourages student's desire to learn and enables learning through the form that is best suited to the student without neglecting alternative methods. The use of different teaching and educational methods increases participant's interest and activity and it offers more flexibility because the student decides how much time to devote to an independent study (Tarus et al., 2015).

Moreover, blended learning facilitates the valuable permutation of different modes of delivery, teaching methods and learning styles that are employed collaboratively and in a meaningful manner in the given context (Gonzales & Vodicka, 2012). Blended learning is characterized as following:

First, the blended learning creates motivating learning environments (Leithner, 2009). On the one hand, blended learning environments can provide students with the option to select the type of learning environment that best meets their learning and scheduling needs. Blended learning allows students to experience and take advantages of the best educational elements that both the face to face classroom environment and the online learning environment have to offer (Osguthorpe & Graham, 2003). On the other hand, teachers become competent with both approaches. The essential feature of blended learning demands teachers to be dynamic and change according to a supported format. Teachers are trained to work competently in both approaches ICT supported format and traditional classroom format (Dangwal & Lalima, 2017).

Second, through the use of BL, students have a chance to choose one of the modes of learning whether to embrace the traditional or new teaching method supported by ICT modules (Singh, 2003). In the traditional classroom, students can get personal interaction with their fellow students, teachers or they can select ICT supported

teaching and learning. The selection of the two modes depends on the nature of the content and the targeted objective. Sometimes the teacher can decide to design on the appropriate model to be used for a particular topic under study. The mixture of two or more methods of teaching facilitates mutual interaction between learners and teachers.

Third, the blended learning approach is used to support traditional face-to-face teaching approach (Anderson, 2007). The real test of blended learning is the effective integration of two main components face-to-face and computer-mediated learning instruction such that it is not just adding on to the existing dominant method (Garrison & Kanuka, 2004). Hence, when all these are combined, it creates meaningful learning; and there is a possibility of improving physical development in the school since the online learning and teaching encourages sharing of experiences among students (Singh & Shivam, 2015; Egbert & Smith, 1999). Through the online learning, students get chance to explore much information from other scholars and make use of the knowledge to transform the school condition. The ability to share experience implies sharing of knowledge and solutions to impending problems that face the surrounding and how others have dealt with. It becomes possible therefore to improve physical learning environment.

Fourth, application of blended learning is design to attain the goal of child-centred education (Chaundry & Malik, 2014). The way blended learning is designed, it makes teaching and learning process, child-centred and provides the maximum ability of student to achieve the goal of child-centred education (Dangwal & Lalima, 2017; Weerasinghe, 2018). When child-centred learning is practised in a blended learning environment, most of the instructions and guides are provided through the online learning environment. In a blended learning environment, the teacher can change the role to be facilitator and evaluator of the learning performance (Marinko *et al.*, 2016).

Fifth, students experience using new technology. In the 21st century of science and technology, the use of ICT is very important, in nowadays the illiterate is not only the one who cannot read and write, but a person who is not familiar with modern technologies is also illiterate. Blended learning helps students exploit available technologies to the fullest of their benefit (Dangwal & Lalima, 2017). Teachers use blended learning to maximise the benefits of traditional face to face learning and online learning (Wang *et al.*, 2009). It has been argued that secondary school teachers use blended learning to create the best learning model for their students and that they blend different methodologies, learning models and approaches to create the most efficient learning environment (Wang *et al.*, 2009).

Six, blended learning is also used in accessing learning materials. Blended learning supports the accessibility of materials such as textbook, notes for students through the internet, mobile phones. Also, through a blended learning approach, learning materials are made available in electronic handheld devices such as mobile phones, laptop, pad, and e-readers (Kozma, 2005). Students are equipped to practice life skills. The students get training in different life skills, and those skills are needed for a successful life (Singh & Shivam, 2015). The students become familiar with few life skills like love, empathy and patience in the classroom through teachers and their fellow students and few like self-management, decision making, critical thinking, communication through the online experiences.

Seventh, blended learning has been used to support a student-centred learning environment which motivates active and deep learning in students (Vernadikis *et al.*, 2011; Machumu, 2019). The practices of student-centred learning strategy enhance teachers understanding of delivering a different type of learning activities such as presentations, laboratory-based software development activities, demonstrations, group discussions and peer teaching. When student-centred learning practised in a blended learning environment, the instructions and guides have to be provided through the online learning environment (Chaundry & Malik, 2014). The role of the teacher in a student-centred approach changed to be facilitator and evaluators of students' performance (Marinko *et al.*, 2016). Thus, instructions to be provided

through the online learning environment, the learning activities and other resources should be carefully selected and designed to support both face-to-face as well as online learning (Weerasinghe, 2018).

2.2.3 Dimensions of Blended Learning Approach

The dimension of BL is majorly associated with linking traditional methods to e-learning activities. It contains a much wider sets of learning dimensions (Singh, 2003). The approaches include, online-offline learning, Self-paced learning and Collaborative learning approach.

Over recent, the BL programme combined one more dimensions that attribute either offline or on e-learning. The offline and online blending means a combination between offline and online forms of learning where online learning usually means the use of the internet and offline learning usually happens in a traditional classroom setting (Singh & Reed, 2001; Singh, 2003). It means that offline learning is managed through the online system. For example, blending offline and online include the learning programs that provide the study materials and the research resources over the web while providing instructor-led classroom training as the primary medium of instruction.

Another dimension of blended learning involves **self-paced learning**. The Self-paced learning contains private learning at a pace that is managed by the learner. Collaborative learning entails dynamic communication among many learners that brings about knowledge sharing (Singh & Reed, 2001; Horn *et al.*, 2012). The blending of self-paced and collaborative learning may contain a review of important literature on a new product followed by the moderate, live, online, peer to peer discussion of the material applied to the learner's job (Singh, 2003; Calla *et al.*, 2018). Moreover, not all forms of learning involve formal learning programs with the systematised content in a specific sequence like the chapters in the textbook (Singh, 2003; Mtebe, 2013).

In reality, most learning occurs in unstructured form through the meetings and email. Blended learning programs design looks to actively conversations and documents from unstructured learning events into knowledge sources available on-demand, supporting the way knowledge workers collaborate and work support. Possibly, the finest form of blended learning is to increase learning with practice and just in time, the performance support tools that facilitate the appropriate performance of job tasks (Singh, 2003). The productivity tools deliver workspace environments that package together with the computer-based work, collaboration and performance support tools. Off the shelf, content is unaware of an organisation unique context and requirements (Singh, 2003, Mtebe, 2013). However, universal content is much less expensive to buy and frequently has higher production values than custom content. Universal self-paced content can be customised today with a blend of live experiences or with content customisation. Industry study opens the door to increase flexible blending off the shelf and custom content, improving the user experiences while minimising cost (Mtebe, 2013).

2.2.4 Elements that form Blended Learning to take place

A blended learning environment refers to the combination of the effectiveness of the face-to-face teaching environments and ICT mediated teaching and learning environment (Driscoll, 2002; Graham & Allen, 2009). Graham and Allen (2009) suggest the following important features of blended learning environments; increased student engagement in learning, enhanced teacher and student interaction, and responsibility for learning and time management. Also, other crucial features identified include; improved student learning outcomes, time flexibility, enhanced institutional reputation, and more flexible teaching and learning environment. BL further offers 24/7 access to training resources, track employee performance and skill development, reduction in training costs and provides personalized training experiences.

Though, different grouping of instructional way are possible, one of which is hybrid learning. The hybrid establishes the potential continuum in the teaching and learning process and it is seen as expansion and continuity of space-time in the learning environment.

The continuum notion as related to learning environments is fundamental to understand (Gomez & Duarte, 2012). The activities of hybrid learning are not tied to the classroom but involve activities that are self-directed learning contexts. There is an expansion of space and time for learning and breaks into discrete approach to design instruction. When a hybrid is constructivist learning environments, the interaction students-students and student-teacher should improve the personal and concerted construction of knowledge in a continuous process at both the theoretical and methodological level (Gomez, 2009).

2.2.5 Models of Blended Learning

Blended learning models join the ability of the instructor to apply technology in the new learning system and facilitate students to attain their potentials in academic excellence (Bart, 2014). The employed models are mainly of two kinds namely; Rotational and Station models. However, these two models are expanded into other subdivisions like the lab rotation model and flex model. A model is a design of operation manual to which the BL curriculum ought to be actualised (Eastman, 2015, Horn & Staker, 2012, 2014; Wilton & Innes, 2018; Bailey *et al.*, 2013; Bart, 2014; Branon, Kellog, Wolf, Mangum, Gibson & Acree, 2017). Most blending strategies currently fall into one of four models as structured and described as follows:

The **rotational model** that is structured generally by defining blocks of time where students are naturally working either in small groups with a teacher or working individually using interactive technology (Branon *et al.*, 2017; Eastman, 2015; Horn & Staker, 2012; Staker & Horn, 2014; Wilton & Innes, 2018). In the rotational model, students can rotate through a fixed schedule, at minimum one of which is online contains station rotation, lab rotation, flipped classroom, individual rotation (Horn *et al.*, 2014).

Station rotation: there are various activities within a station rotation model that occurs in a single space with students moving from station to station within set periods (Eastman, 2015; Branon *et al.*, 2017). In the station rotation, the class sizes are often larger than is typical of schools using more traditional modes of instructions. Moreover, in the model, student to teacher ratios typically range between 8:1 due to these enabled more individualised attention for each student than the more traditional model.

Lab rotation model: in the lab rotation model, students can turn around the classrooms. The environment in lab rotation is mostly conventional, using classroom and what appears to be conventional computer labs (Eastman, 2015; Branon *et al.*, 2017; Wilton & Innes, 2018). The activities undertaken in those spaces are distinguished by individualization, particularly in a lab setting.

Flipped classroom: In these classroom, individual student access content delivered online, asynchronously, off site and outside of the school day (Uzunboylu & Karagozlu, 2015; Eastman, 2015; Branon *et al.*, 2017; Wilton & Innes, 2018). The student accesses content before meeting with class, allowing in-class time to be used to assess individual understanding of that content by the student and the teachers through student to student, small and large group through collaborative work. All the activities in the flipped classroom are directed in helping the students to achieve a deeper understanding of the subject matter (Eastman, 2015; Wilton & Innes, 2018).

Individual rotation: In individual rotation, the environment of the school begins to depart from the typical classroom-based setting. In individual rotation, teachers and student can complement the online content delivery with direct face to face instruction (Eastman, 2015; Wilton & Innes, 2018).

Flex model: the model emphasizes individual online instruction for delivery of the major content. Face to face individual and small group interaction with a teacher occurs on a needed basis (Horn *et al.*, 2012; Branon *et al.*, 2017; Wilton & Innes, 2018). Flex model is designed to allow students to work at their own pace while still

having the opportunity for face to face engagement to promote their understanding (Bailey *et al.*, 2013). The environment of flex space is based upon an individual workstation for individual students' convenient. The environment of naturally flex space is based upon an individual workstation for each student with convenient, subordinate pull out and small group meeting space. The flex environment provides the spaces ranging from the individual workstation and small group break out and direct instruction areas to more dynamic and social spaces. These spaces can follow modern workplace environments (Westmass *et al.*, 2014).

The self-blended model includes delivering a portion of a student course load primarily online (Bart, 2014; Branon *et al.*, 2017). These courses balance courses delivered using more traditional approaches and modes for examples in seminars, lectures and labs. The environment of self-blended content can be delivered in a variety of locations in school or outside the school, enabling student's choice regarding time and place (Staker *et al.*, 2014; Wilton & Innes, 2018).

The enriched virtual model expands upon the self-blended model enhanced virtually blended delivers a portion of every course online (Drill *et al.*, 2013; Westmass *et al.*, 2014; Branon *et al.*, 2017). According to Branon *et al.*, (2017), the content can be dispensed asynchronously and a variety of locations. This asynchronously model is complemented by face to face interaction with teachers and peers in more conventional settings. In this model, students may not be on campus every day (Eastman, 2015; Brannon *et al.*, 2017). Enriched virtual can consider blended learning environment similar to the self-blended model. Enriched virtual sometimes can provide spaces for seminars, classes, labs and cyber lounges for using online resources (Horn & Staker, 2014).

2.2.6 Conditions for the adoption of Blended Learning Approach

The adoption of blended learning in secondary school is a hard activity, since it demands some basic preparations in aspect of teaching and learning process, students, content design and the infrastructures (Dangwal & Lalima, 2017). The following are necessary conditions in the adoption of blended learning approach:

First, the BL demands well trained teachers who could emphasis on child-centred approach of teaching and learning perspective (Chaundry & Malik, 2014; Marinko et al., 2016). The teachers are needed to be familiar with the blended learning approach and have the skills to blend both traditional face-to-face and online teaching and learning delivery. Also, teachers need to be trained to develop content in digital form so that it can be available to students anywhere, anytime. Teachers should know how to utilise state-of-the-arts learning technologies including websites, blogs, YouTube facility, and software like Skype, Google talk and social networking sites for educational purposes (Machumu, 2019).

Second, teachers engaging in a blended learning approach should have a scientific attitude to adopt diverse learning technologies relevant for blended learning implementation in secondary schools (Kennedy & Archambault, 2012; Farrelly & Shand, 2017). The scientific attitude implies that teacher needs to possess the following criteria while aspiring to implement a blended learning approach: observation skill, optimistic, and problem-solving skills as well as technology regarding the choice of methods to blend. The scientific attitude can help teachers to deal positively with the failures obtained due to institutional conditions when working in a blended environment. Thus, to adopt a blended learning approach online learning system, the system should be flexible, and perhaps there should be flexibility in other aspects of learning such as learning timetable, delivery methods, and assessments and examination system. These aspects are very crucial for the adoption of blended learning approach in educational institutions as well as in secondary schools (Davis & Fill, 2007; Oh & Park, 2009; Machumu, Ghasia & Musabila, 2018). However, the success of the adoption of the blended learning approach needs teachers to be flexible and ready to accept changes and be innovative and dynamic.

Third, ICTs facilities and infrastructures: Blended learning approach largely depends on the infrastructures like well-furnished computer lab, the internet connection, and provision for video chatting (Graham & Allen, 2009). The school should have both

infrastructures, good classroom but also have well-furnished computer laboratories with a sufficient number of computers to satisfy all the students of one class and the internet facility. In support of that, Dangwal and Lalima (2017) declare that the continuous internal assessment and other tools for formative evaluation should be able to provide the needed required for the adoption of the blended approach in terms of facilities and infrastructures.

The fourth condition for the adoption of the blended learning approach in secondary schools is the parents and guardians. Parents and guardians as essential stakeholders play important roles for the student's education, especially the application of modern teaching and learning approaches need to be aware of a blended learning approach to teaching and learning. As it has been established, parents and guardians need to support their children so that can be ready to adopt blended learning approach and can accept that the combination of both traditional face-to-face and online learning delivery for the benefits of their children academic progress (Dangwal & Lalima, 2017).

2.3 Theories Underpinning this Study

The study describes three theories though it is guided by one of them; the UTAUT theory as discussed in detail hereunder:

2.3.1 Connectionism Theory

The concept connectionism dated back from the publications of Warren McCulloch and Walter Pitts (1943). Its origin belongs to the works of Thorndike in 1930s (Karadut, 2012) and Edward Lee Thorndike (1874-1949), a renowned American psychologist, educator and lexicographer who was interested in the psychological theories of learning thereby testing various mean to develop intelligence. The developed theories of learning in human being have contributed to the educational psychology practices since the 20th century (Raychev, 2002). The idea of connectionist models demonstrates parallel distributed processing (PDP) which represent concepts as patterns of activation distributed across many nodes and links. Accordingly, the nodes respond to input in parallel and then, in turn, they either

excite or block the other nodes they connect to. In practice, the connection is said to happen when there is a matching between the output of the node in the training and the vice versa results to disconnection (Andrade, 2004.,Reese,2013). Thorndike's theory of connectionism implies that the learning process is completed only when the subject or learner makes accurate connections between the new information. The major components in the connection are expressed in the law of effect, the law of exercise, multiple responses, prepotency of elements, response analogy, identical theory of transfer, associative shifting, the law of readiness, the law of trial-error and availability. However, the intrinsic logic of connectionism theory of learning is based on incremental learning process.

The incremental learning process entails that a student can gain the expected ability only if there is the reiterative or successive introduction of elements of the topic beginning from the simplest to the hardest (Johnston *et al.*, 2013). . Likewise, the law of effect suggests that making logical connections between goals and expectations is necessary since the internalization can only happen when the aim and expectation are coherently achieved. Andrade (2004) holds that the law of exercise prompts the need for interaction between stimuli and responses which in turn foster the repetition. The elements of multiple responses are triggered to inculcate the behaviour of being able to react to many stimuli at once thereby being able to priorities the information. The act of making new data more attractive for the learner to internalize belongs to the prepotency elements. The other implement is the act of employing the already set of acquired knowledge in the case of corresponding states.

Meddler (1998) understood connectionism as a method used in the field of artificial intelligence, cognitive psychology and science as well as philosophy of mind that tunes the behaviour of learner's in to ICTs oriented mentality. Though it is not a theory in itself, it serves as a mechanism of network creation in the level of interaction and behaviourism. Ultimately, connectionism portrays a psychology of comprehensive theory of learning. In other ways, the connectionism is associated with the principals of associations that infer to elements of integrating entities through experience and complex ideas.

Thorndike, the most commonly cited connectionist, summed his ideas on learning into three laws of learning, which should have accounted for both human and animal learning. Connected to the study, the theory permeates its logic of association of things as it takes place in the online learning. Distance learning involves a collection of technological responses to different learning cultures, methods and inspirations as stimuli.

The response rate for learners depends on the ability to respond to the stimuli and that could be observed through innovations in teaching and learning environment. The claim that all forms of thoughts and behaviours can be explained through stimulus-response relations with use of repetition and reward, without need for introducing any unobservable internal conditions is currently regarded as incorrect.

Therefore, connectionism theory is essential theory to develop previous learning theory for their application to a globalised and networked world (Ally, 2007). Through blended learning, the teachers in secondary schools are emphasised to use blended learning approach in their classroom to create interactive and realistic learning environments for the student (Chittaro & Ranon, 2007). The difference of using traditional teaching method such as lecture style to a blended learning approach is that blended learning integrates traditional face-to-face and interactive rich forms of classroom instructions with learning technologies. Secondary school teacher is advised to adopt blended learning approach of instruction to improve teaching and to learn in secondary schools, of which connection of different approaches, thoughts and ideas are essential. Although the connectionism defends the concept of learning through response, it was replaced by learning as knowledge construction later in the 20th Century.

2.3.2 Constructivist Learning Theory

The theorists involved in this theory are Jean Piaget (1896-1980), Lev Vygotsky (1886-1934) and John Dewey (1859-1952). The basic ideas of constructivist theory emphasise how individuals actively construct knowledge and understanding. Constructivism approach assumes that learners come and get knowledge by

recognising the meaning of what is found in the environment. The constructivist learning theory encourages learners to be active creators of their knowledge (Brandon, 2005).

In this study, the constructivist theory was explained by relying on John Dewey's ideas. John Dewey, an American founder of progressive education and a direct counterpoint of the traditional education of the schools of the 20th Century. Dewey emphasises that students can learn best when given a chance to learn by doing. Dewey explained that educational experiences involve the interaction between the learner and what is learned. In progressive education, Dewey defines education as the scientific method by which man studies the world and accumulates knowledge of meanings and values (Dewey, 1938). Dewey (1938) explains that the significance of progressive education is to prepare the students for their future responsibilities and to succeed in life using the acquisition of the organised bodies of information and prepare the skills which realise the material of instruction.

By its meaning, blended learning relates to the concepts of progressive education. It is suggested that instructional approach to teaching and learning aligned by John Dewey belief of making learning purposeful and put the learner at the centre of experiences. When student-centred learning is practised in a blended environment, most of the instructions and guides have to be provided through the online environment. These types of student-centred learning activities can attract more learner and increase learner participation (Vandelmolen, 2010; Chaundry & Malik, 2014). Therefore, the blended learning environment is designed in different platform such as moodle using an adaptation of the practical enquiry model. This intervention is designed to ensure that the benefits of both online and face to face learning environment were attached for the achievement of a set pedagogical goal (Gyaase & Gyamfi, 2015).

2.3.3 UTAUT Theory

The application of the Unified Theory of Acceptance and Use of Technology (UTAUT) has widely been experienced in researches related to information technology and marketing. The theory creates base for it to be selected as one the preferred theory to be used in explaining the concepts of the study. The UTAUT is among the most recent theories since it was developed in 2003 (Venkatesh *et al.*, 2003). The theory provides four aspects which are used to explain the decisions or acceptance of the individual to use a given product (Kim, 2009). The four elements include; performance expectancy, efforts expectancy, social influence and facilitating conditions (Sarker *et al.*, 2005; Sarker, 2010). According to Lescevic, Ginters and Mazza (2013), the performance expectancy refers to the level that an individual is conceived that, the use of a certain item would facilitate his or job performance. Likewise, the effort expectant implies the degree of ease related to usage of the system. The social influence relates extent to which a person conceives that it is useful for the other to find that he or she uses the net product or system.

Finally, the facilitating conditions refer to the level of belief the individual has about the organisation and technical infrastructure and its support for the existence of the system. The first three are direct determinants of usage intention and behaviour, and the fourth is a direct determinant of user behaviour (Sarker&Valacich, 2010). Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behaviour. The possibility of the individual to use the system or product would be identified by assessing the constructs like the performance, effort, social and facilitating conditions.

Despite its novelty, the UTAUT has been widely employed in technology adoption and diffusion research as a theoretical lens by researchers conducting empirical studies of user intention and behaviour (Lo *et al.*, 2011). At the time of writing, the original article by Venkatesh *et al.* (2003) was cited under 5,000 times, with UTAUT being discussed regarding a range of technologies (including the internet, web sites, Hospital Information Systems, Tax Payment Systems and Mobile Technologies

among others), with different control factors (such as age, gender, experience, voluntariness to use, income, and education), and focusing upon a variety of user groups (for instance, students, professionals, and general users). This study utilises the UTAUT theory to learn how implementers adopt traditional and modern teaching methodologies in teaching and learning.

2.4 Empirical literature review

Kihoza Zlotnikova, Bada and Kalegele (2016) conducted a study on blended learning. The study assessed teacher's abilities to support blended learning implementation in Tanzania secondary schools. The study findings showed that an increase in teacher trainees' education level does not lead to increase in ICT knowledge level. It demonstrated that teachers liked to know and use of blended curriculum contents in the classroom, but few of them use ICT tools due to the prevailing avoidable and unavoidable limitations. The study further established that teacher's education level could not be used as the measure to determine how ICT resources can be used to teach students in secondary school.

Similarly, Alokuk (2016) conducted a study investigating the effectiveness of blended learning as the means of supporting management development in MBA programmes. The study was done in Nigeria, at University of Abuja. The findings of the study showed that there were differences between marketing, education and academic language. The language used in the marketing of MBA programmes was investigated; all programmes in the university were in practices of blended learning programme even though they were marketed as fully online learning, distance teaching and face to face learning. Also, it was found that MBA programmes do not use blended learning delivery models. Thus, the study concluded that blended learning was not available because several reasons. First, lecturers found it difficult to change from their traditional ways of teaching and learning. Also, students particularly those who lived off-campus wanted to see lecturers live. Further, it was noted that time and financial costs were the main obstacles to transferring learning and teaching to other models.

The other study was done in Dubai by Khan, Reza, Huda and Mulani (2015) aimed to investigate barriers and solutions for the adoption of blended learning in private school for students from low income families. The study involved students from medium to the minimum –low-wage parents. The case study design was employed. Data collection was done by using the structured questionnaire and semi-structured interviews. The study found that lack of funds to afford ICT tools and poor government implementation of the programmes were the major obstacles the faced the practice of the blended learning approach. However, teachers were found to be very helpful in intervening to the demands of the students from low-income families. It was commended that the collaboration between community and schools could enhance the practice of the approach through mutual support while the government is making efforts to reduce the rate of school fees.

Ndibalema (2014) investigate teachers' attitude towards the application of ICT as a pedagogical tool in secondary schools. The study was done in Kondoa, Dodoma using interview and questionnaire methods to 80 respondent teachers from ten selected schools. It was revealed that teachers had positive attitude towards the application of ICT as a model of teaching. However, the integration of the model was not effective since some teachers were less familiar with the application of ICTs and the model. The study concluded that teachers' situation in applying blended modelling schools was lamentable hence calling for deliberate efforts to build capacity.

Machumu *et al.* (2016) conducted a study that came up with the views that VET educators needed designing locally blended learning models. The model was envisioned to change the nature of teaching and learning processes in the discipline. It was also noted because VETs educators wanted to incorporate blended learning delivery approaches, they sought it was better to establish e-learning in all VET colleges and students be aware of incorporating of blended learning delivery approach.

Raphael and Mtebe (2013) studied blended learning at the University of Dar es Salaam. The study examined students' experiences and challenges of using a blended learning approach. It was found that students experience outdated learning resources posted in the learning platform, the Moodle system. That is, instructors were not updating resources once they post them in the system. Also, it was found that most of the respondents encountered technical difficulties when participating in blended learning delivery. Most of the respondents explained that accessibility of some PDF, animations and video clips was a challenge.

2.5 Research Gap

The empirical literature review shows that most studies on blended learning were done in developed countries at the university level, and few studies were done in developing countries like Tanzania. The studies done in Tanzania were limited to the university level, few studies on blended learning at lower level of education particularly secondary school level. We have also seen, most blended learning studies covered effectiveness, assessment, and implementation, none of the studies examined stakeholders' perception on adopting BL in secondary school in Tanzania. Therefore, this study aimed at bridging the gaps by finding out stakeholder's perceptions the adoption of blended learning approach in a selected secondary school in Morogoro municipality.

2.6 Conceptual Framework

Conceptual framework is defined as an abstract idea or a theory used to develop new concepts or to reinterpret existing ones (Kothari, 2004). It presents the relationship between independent and dependent variables. Figure 2.1 provides a conceptual framework for the study. From the figure, the dependent variable is the adoption of blended learning in the selected schools which is predicted by the set of independent variables like stakeholders' knowledge and attitude of BL, supportive school learning environment and the extent of use of blended learning approaches.

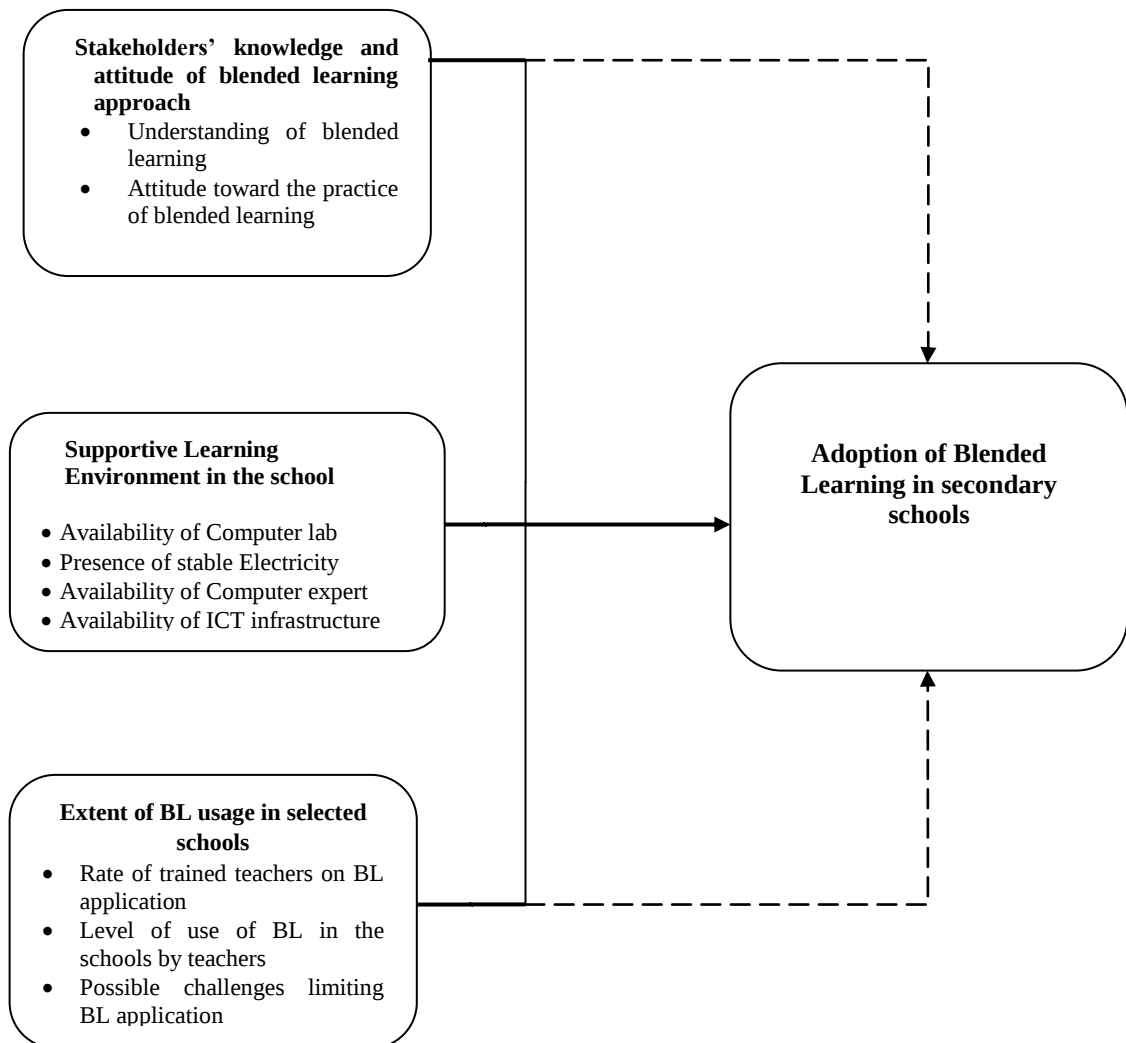


Figure 2.1: Conceptual Framework

Source: Adopted and modified from Ivatury and Mas (2008)

In attempt to explain the interrelation among variables, the study proceed that the independent variables all together and as individual components affect the willingness to adopt BL approach in secondary schools. To begin with, the knowledge and attitude of stakeholders pertaining to BL implementation is the aspect of knowledge that creates a base for teacher and students to implement blended learning in schools. However, it is often held that knowledge of ICT application on BL approach does not guarantee teachers willingness to practice blended learning approach in schools. It followed that the attitude of stakeholders towards BL affects the adoption of BL in schools.

Similarly, the availability of supportive learning environment affected the adoption of Blended learning. The presence of indicator variables mentioned in the main variable affirms the existence of the practice and the absence implies lack of the practice of the BL approach in the selected schools. The indicators consist of availability of Computer lab, presence of stable electricity, availability of Computer expert, and availability of ICT infrastructure.

Likewise, the adoption of blended learning in secondary schools was proven by extent of BL usage in selected schools. The level of implementing BL in schools was measured by considering the rate of trained teachers on BL application, and level of use of BL in the schools by teachers and possible challenges limiting BL application.

2.7 Conclusion of the literature review chapter

The chapter has provided a thorough analysis and discussion of the theoretical and empirical reviews. The theoretical review has summarized studies with the underlying theory for the study. The reviewed theories include the connectionism, Constructivism and UTAUT theories. The UTAUT theory is the underlying theory for the study since it provided more light in explaining the concepts and variables of the study. The empirical review ushered a detailed understanding of the study objectives and thereby finding the research gap through which the study should base its focus. Majority of the reviewed works of literature found that BLA is highly applied in universities as compared to secondary and primary schools. This gave a

credible justification as to undertake the study on lower level of education in particular secondary schools. Similarly, the empirical review provided some observation about the perception of teacher and students on the application of BLA in universities and schools, however, little was known about the perceived reason for the poor adoption of BLA in secondary schools especially, in Morogoro municipality. It followed that the study was worth to be conducted in the mentioned area to understand stakeholder perception in the adoption of BLA. Finally, the conceptual framework provided a paradigmical demonstration on the focus of the study variables and interaction between the variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes different aspects of research methodology as they are used in collection and analysis of data. The chapter consists of research approach, research design, area of the study, target population, sampling procedures, methods of data collection and data analysis procedures. It also describes the issues of validity, reliability and ethical considerations.

3. 2 Research Approach

The study used a mixed research approach because the nature of the problem influences the researcher to collect both qualitative and quantitative data. In addition, the specific objectives demand that both types of data to be collected hence triangulation method was implied. According to Creswell (2009), the mixed research approach involves both, the uses of qualitative and quantitative approaches that are integrated. In this study, a qualitative approach was used to explore stakeholders' perceptions on the blended learning approach in secondary schools. The qualitative approach allowed the researcher to explore the support of the learning environment in the interest of the study in natural settings. Also, a quantitative approach was used to measure the extent of adoption of blended learning approach in selected secondary schools.

3.3 Research design

Research design refers to analytical thinking and conception of the research endeavour in the light of finding the best means to address the research problem as elaborated by study objectives (Punch, 2004). The study used a multiple case study design to learn about the perceptions of stakeholders on the adoption of blended learning. The case study design is a qualitative methodology that accommodates mixed-methods, thus enabled the researcher to study the problem within its context

and understand it from the perspective of the respondents and practitioners (Baxter & Jack, 2008).

The case study was used because it provides in-depth data and interpretive assessment of the approach. The case study design facilitated the researcher to explore and analyse the details of a phenomenon of the study from schools by the applying different sources of data. The study was a case study since it sought to extract data from the real life experiences of people in specified location and in particular about the case of implementing of blended learning approach. Yin (2003) affirms that the design can explore individuals, organisations, societies, relationships or programmes. Besides, the specific objectives were also determinant factors that guided the researcher to select the case study design since the core content of the three specific objectives needed in-depth information and analysis the evidence collected from the life-world understanding of research respondents.

3.4 Area of the Study

The study was conducted in two secondary schools in Morogoro Municipality, in Morogoro Region. The two schools are the only school that have began to implement the BL approach following the installation of ICT facilities that are necessary for the application of Blended Learning Approach. Morogoro Municipality has forty-nine (49) ordinary level secondary schools where twenty-three (23) are publically owned, and twenty-six (26) are privately owned(URT,2016). Two secondary schools that were included in the study are; Kola hill and Kilakala secondary schools. The selection of Morogoro Municipal was based on the existence of the schools that have ICT infrastructures that support application of blended learning. Besides the presence of ICT infrastructures, teachers in the selected schools were also trained on the application of BL approaches.

3.5 Target Population

The research population is the collection of individuals or objects that focus on scientific inquiry. The target population is the group of people to which the researcher was interested in gaining the data and drawing a conclusion (Kothari,

2005). The target population of this study included education stakeholders especially in the two schools and education officers. The entire population was composed of 400 people but the targeted frame was 74 respondents as described in section 3.6. The targeted participants involved heads of schools, teachers, students, education quality assurers and municipal educational officer.

3.6 Sampling Techniques and Sample Size

3.6.1 Sampling Techniques

The study used both probability and non-probability sampling techniques to select the list of respondents. The probability sampling technique holds that all research participants have an equal chance to take part in the study (Given, 2008). Within the probability sampling, there are different techniques which can be used in the selection of population sample. Some of these techniques are simple random sampling, stratified sampling, clustered random sampling, and systematic random sampling (Creswell, 2014). The study used stratified random sampling technique where the population sample was subdivided into some strata like teachers and students within the same schools. .

The stratified sampling technique was used to select teachers and students. Upon sorting the groups of teachers and students, a lottery method was used to select the required number of teachers. Each school had about 20 teachers and thus the researcher needed to involve 16 teachers as respondents from each school. The technique was also used to select student sample from Kilakala girls with 200 students and 190 students from Kolla hill secondary school.

The non-probability sampling design involved judgmental criteria in the selection of respondents for the study. In the application of non-probability sampling design, the researcher focused on some criteria such as positions and experience in work of the designated respondents. In this study, purposive sampling technique was employed to select heads of schools, Municipal educational officer and quality assurer. The use of purposive sampling was based on the positions held by the respondents. The study

indented to solicit data from top education leaders in the study area who were informed on the application of a blended approach.

3.6.2 Sample Size

According to Kothari (2014) sample size is the number of items to be selected from the universe. The sample contains all the major characteristics of the population to allow generalizations about the entire population. According to Cohen *et al.*, (2007), there is no clear cut for the correct sample size as it depends on the purpose of the study and nature of the population under scrutiny. The estimated sampling size constituted the heads of school, teachers, students, municipal educational officer and education quality assurers. The study approximated the samples size of 74 participants; however, the attained sample was 70 as illustrated in Table 3.1

Table 3.1: Sample size

Category of Participants	Used Sampling techniques	Estimated Sample size	Attained Sample size
Municipal Educational Officer	Purposive Sampling	1	1
Heads of School	Purposive Sampling	2	2
School Quality Assurers	Purposive Sampling	4	2
Teachers	Stratified Sampling	32	30
Students	Stratified Sampling	35	35
Total number of participants		74	70

Source: Field Data, 2019

3.7 Source of Data

The research used both primary and secondary data. According to Kothari (2014), primary data are those data collected through direct communication with participants. This study collected primary data from the experiences of head teachers, teachers, students, and municipal education officer and education quality assurers. The secondary sources of data were obtained from documentary sources like books, journals, internet sources and school documents.

3.8 Data Collection Tools

The study developed three tools of data collection. Data collection tools refer to the methods that the researcher uses so as to gather information from the participants (Kothari, 2004). Data collection tools included questionnaires, interview guide and observation checklist.

3.8.1 Questionnaire

The questionnaire tool was used to collect data from secondary school teachers and students. This tool was administered to 33 students and 30 teachers. The reason for using questionnaire was that it enabled the researcher to obtain data on stakeholders' understanding of the adoption of blended learning approach in selected secondary schools as a means to improve students' academic performance. The tool also helped the collection of within a concise time, and it was cost-effective (money).

The questionnaire guide was composed of closed and open-ended questions. The application of both open and closed questions helped respondents to focus on the questions, and avoid easy drawing of response, but also it provided chance for respondents to give their viewpoints concerning the contents of the study. At the end of the study, all students submitted the questionnaires back but only 28 teachers brought back the filled questionnaires, the other two did not.

3.8.2 Interview Guide

According to Punch (2004), interview is an excellent way of accessing people's perceptions, meaning, awareness definitions of situations and constructions of reality. The semi-structured interview method was employed to 9 key informants. The need was to get detailed data from primary sources about the content of the study. The interview method was used to respond to the three specific objectives. The selection of semi-structured interview was used because it provides significant degree of freedom to respondents to give detailed information while guided by the probing questions of the interviewer. The interview, therefore, assured the attainment of more and in-depth information, and it allowed flexibility as there is an opportunity to restructure questions (Kothari, 2004). The study used an interview guide to collect

data from the 2 heads of the schools, 2 teachers, 2 students, 1 municipal educational officer and 2 quality assurers of education. The tool was chosen because most of the participants who are administrators were expected to have more information and experience to present through one-to-one conversation.

3.8.3 Observation checklist

The method is well suited when employed with other methods like interview or documentary analysis (Baker, 2006). The study made use of qualitative observation technique to explore the state or condition of the ICT facilities and school infrastructures which support blended learning methods. The researcher recorded the observed facilities by taking some photographs to bring evidence to what was found in the field. The observation method was found very useful in complementing data gathered through interview and questionnaire methods.

3.9 Data Analysis

Qualitative data were analysed through the use of thematic content analysis. In the course of facilitating the analysis, the collected data were prepared, coded and edited. The interview data were subjected to procedures of data management namely; reduction and construction of themes related to the specific objectives. The coding process started after the text were transcribed into verbatim and translated. The specific objectives guided the coding process. The matrix technique (Table 3.2) was used to create categories of concepts, meanings and find the similarity between respondents' opinions. The processes involved iterative and intensive reading of the narrative text from every respondent.

The quantitative data were analyzed using descriptive and Statistical Package for Social Sciences (SPSS). The descriptive provided the mean, frequencies and percentage distributions. The process involved checking of data collection forms for legibility and consistency as well as discarding the incomplete responses which had missing data. The method assisted in coding both words and phrases depending on respondents' responses. This allowed open-ended questions to be analysed systematically while data being entered into a user-friendly and retrievable database.

Table 3.2: Matrix of Research questions, methods, respondents and data analysis

RESEARCH QUESTION	DATA COLLECTION METHODS	RESPONDENTS	DATA ANALYSIS
d) What are stakeholders' knowledge and attitudes of the adoption of blended learning approach in secondary schools?	Interview guide Questionnaires	Heads of school, Municipal education officer, Quality assurers of education, Teachers and students.	-Content analysis
2. How are learning environments supportive for the adoption of blended learning approach in selected secondary schools in Morogoro Municipality?	Questionnaires Observation Interview guide	Teachers and students	-Descriptive statistics through SPSS -Content analysis
3. To what extent is the blended learning approach used in selected secondary schools in Morogoro Municipality?	Questionnaires Interview guide	Teachers and Students Heads of school,	-Descriptive statistics through SPSS -Content analysis

Source: Researcher's construct (2019)

3.10 Validity and Reliability

The study considered the issues of validity and reliability of the findings. In fact, different attempts described in subsequent sections below were made to ensure the collected data; results and presentation provided valid and reliable findings.

3.10.1 Validity

Validity is concerned with the degree in which the empirical measure or several measures of a concept accurately represent that concept (Orodho, 2009). According to Denzin and Lincoln (2005), the standard by which validity is determined is different depending on the paradigms under which the research was performed. It means that the situation whereby a measuring instrument measures what is supposed to be measured. Thus, to achieve validity, the study involved the following techniques:

i) Triangulation

Triangulation refers to a comparison of different kinds of data and different methods to see whether they support one another (Silverman, 2010). This study used questionnaire and interview methods to collect data as a way of triangulation. The triangulation was used to ensure complementarity of data gathered for the study.

3.10.2 Reliability

Reliability refers to consistency of repeated measurements to observe if it produces the same results across time observed (Creswell, 2009). A reliable research method is one that comes up with consistent results across different time and participants. The study performed a pilot study in the selected public schools that have ICT technology before conducting the actual study.

3.11 Ethical Issues

Ethical codes in research like confidently, respect of research participants and demand for free consent of the respondent is the defined right practices to be upheld in the conduct of research. The study adhered to all ethical issues and consideration on conducting a research by seeking a research clearance letter from Mzumbe University (MU). The researcher informed the participants on the objectives of the study and asked their informed consent to participate in the study. The researcher observed the participants' rights of privacy and confidentiality of the information they provide by observing anonymity of their names. According to Scheuren (2004), the confidentiality of data supplied by participants is of prime concern to all reputable survey organisations. However, the heads of school, MSEO and quality assurers granted that their titles be mentioned in the report.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The chapter presents the findings of the study obtained from the field. The presentation of the results of the study follows a series of specific objectives. However, before the elaboration of the study findings, the study describes the social-demographic information of respondents who participated in the study. In order to be familiar with the study, the specific objectives of the study intended to identify knowledge and attitudes of stakeholders on the adoption of blended learning approach in selected secondary schools; to assess the support of school learning environment in the adoption of blended learning approach in selected secondary schools and to assess the level of usage of blended learning approach in selected secondary schools. The selected schools were found in Morogoro municipality, in particular, Kola hill and Kilakala secondary schools.

4.2 Socio-Demographic characteristics of respondents

The information about the demographic profile of respondents was found necessary in providing an understanding of the research participants for the study. The study sought for the demographic information from teachers and students who participated through questionnaire method. Virtually, the demographic information considered features like gender, level of education, and work experience for teachers, whereas the consideration was put on only gender and class level for students. Table 4.1 illustrates socio-demographic characteristics of respondents, both teacher and students.

Table 4.1: Socio-Demographic profile of respondents (N=61)

Variables	Categories	Teachers “n (%)”	Categories	Students “n (%)”	Grand total
Gender	Male	14 (50)	Male	12(36.4)	26(42.6)
	Female	14 (50)	Female	21(63.6)	35(57.4)
	Total	28(100)	Total	33(100)	61(100)
Level of education/C lass level	Diploma	3(10.7)	Form I	-	3(4.9)
	Degree	22(78.6)	Form II	-	22(36.1)
	Masters	3(10.7)	Form III	14(42.4)	17(27.9)
	Other levels	-	Form IV	19(57.6)	19(31.1)
	Total	28(100)	Total	33(100)	61(100)
	5-10 years	13 (30.7)	-	-	13(30.7)
Work experience	11-15 years	12 (25.5)	-	-	12(25.5)
	16-20 years	-	-	-	-
	21 and above years	3(10.5)	-	-	3(10.5)
	Total	28(100)	-	-	28(100)
	Kola hill	16 (57.1)	Kola hill	16(48.5)	32(52.5)
Secondary School name	Kilakala	12(42.9)	Kilakala	17(51.5)	29(47.5)
	Total	28(100)	Total	33(100)	61(100)

Source: Field Data, 2019

Table 4.1 shows that the representation of respondents by sex distribution was adhered to in both teachers and students respondents. However, the female sex was significantly highly represented by 57.4% as compared to 42.6% of male sex respondents. About education levels of respondents, it was revealed about 78.6% of teachers had a bachelor degree level, 10.2% of respondent teachers had a master degree and the rest 10.2% were diploma holders.

As for students, the form four students were the majority with 57/6% followed by form three students with 42.4% of their representation. Only teachers as respondents were asked to provide information about their work experience. The result shows that 30.7% of teachers had the work experience of 5-10 years and 10-15 years by 25.5%. Respondents for the study were drawn from the two secondary schools, and the dominant group came from Kilakala secondary schools since it was represented by 51.5% of respondents and Kola hill was represented by 48.5% of respondents.

4.3 Stakeholders' Perception on the adoption of a Blended Learning Approach

The first objective of the study was to identify the stakeholders' perception on the adoption of blended learning approach in selected secondary schools of Kola hill and Kilakala. To elaborate on the perception of respondent, the study considered two aspects that indicated respondents' perception. These aspects include the understanding of the concept and attitude towards the practice of Blended learning in the schools. Data were attained by interview and questionnaire methods.

4.3.1 Stakeholders' understanding of Blended learning approach

The study sought to collect the opinions of respondents regarding the theoretical knowledge of blended learning. In the course of interview sessions, different respondents provided conceptual definition of Blended learning. The quality assurer looks at the meaning of Blended learning approach in the following words:

Blended learning [BL] approach is the opportunity for a student to learn in different environments be in class or out of the classroom whereby he/she may utilise different technologies such as ICT to access learning(Quality Assurer, 14/ 05/ 2019 13: 00hrs.).

The other definitions were provided by teachers in the interview conversations, one of the teachers from Kilakala had this to say: “To my understanding *Blended learning is the approach used in teaching by the use of computers* (Kilakala Teacher, 10/05/2019. 09:30hrs)”. In addition, an interviewee from Kola hill conceived blended learning as an embedment of traditional and modern technology as she said:

The blended learning approach is the technique of combining the traditional method and the new technologies through the use of internet and computer-connected devices that help students to gain more materials as they prefer. (Kola hill teacher, 08/05/2019.12:00hrs.).

Together with teachers and quality assurer, students also had their fair share in the describing their perceptions of blended learning, among other different conceptions that demonstrated their understanding of the concept. One of the students defined blended learning as follows:

To me, Blended learning approach is the means used in teaching using electronic devices such as computers, projectors and the like but also other old methods are applied in mixed ways (Kilakala Student, 10/05/2019. 14:15hr.)

The study found that key interview informants have standard understanding of blended learning. The concept blended learning approach was understood as the method of using modern ICT technology in combination with traditional methods for teaching and learning process and it can take place inside or outside the classroom.

The study further sought to collect responses from the majority of respondents, teachers and students through questionnaire methods so as to explore to what they understand about blended learning. Two questions were posed to measure the understanding and awareness of respondents about blended learning approach. Figure 4.1 presents respondents' responses on the first question that measured awareness of respondents about blended learning.

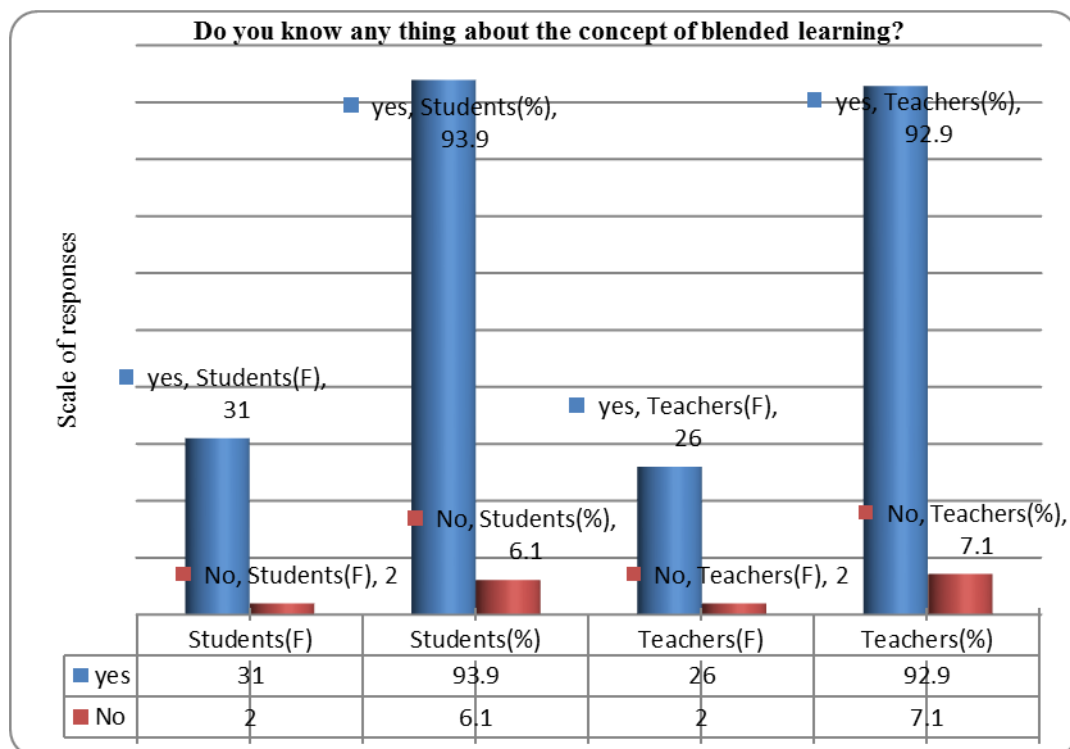


Figure 4.1: Respondents' awareness about Blended learning

Source: Field data (2019)

From the figure 4.1, the study revealed that respondents were highly aware of Blended learning by 93.9% of the students and 92.9% of the teachers.

Having known that respondents' awareness about blended learning was very high, the study proceeded with measuring the theoretical understanding of the concept of blended learning. The descriptive responses are provided in the Table 4.2.

Table 4.2 Teachers and students understanding of Blended Learning

Defining blended learning	Students	Teachers
	Frequency (%)	Frequency (%)
A learning by using other sources like computer, TV, laptop and tablet not only from book sources	30(90.9%)	2 (7.1%)
Learning through technology and traditional methods like use of computer, projector and other ICT facilities	2(6.1%)	25(89.3%)
I don't know	1(3%)	1(3.6%)
Total	33(100%)	28(100%)

Source: Field data (2019)

The table 4.2 shows that respondents have higher knowledge of blended learning. While about 91% of respondents understood blended learning as the learning system by use of ICT sources like computer, TV, laptops and tablets not only from book sources. Other respondents, 89% defined blended learning as an approach to learning through technology and traditional methods like use of computer, projector and other ICT facilities. The second definition was offered by majority of teachers and it clarifies the first definition as provided by majority of students. This implies that teachers were more knowledgeable than students about the concept. The difference in awareness suggests that teachers are in position to impart knowledge to students by the use of blended learning approach. The study found that respondents (from both methods) have high theoretical understanding of the concept of blended learning. This was an impressive observation since it provides ground to dig further on the nexus of theory and practice.

4.3.2 Respondents' attitude about utility of blended learning approach in schools

To know whether stakeholders have right or wrong understanding of the phenomenon may have some variations in attitude towards the utility of the phenomenon. It was from this ground that the study sought to learn from heads of schools and quality assurers as respondents about their attitudes towards blended learning, especially if the act has any importance in schools. In the course of interview sessions, different interviewees showed to have a positive attitude towards the blended learning approach. This was verified from the shared information from different key informants from the two secondary schools, and also from the Municipal Secondary Education officer. To begin with, the Municipal Education officer of Morogoro affirmed his strong conviction of the importance of blended learning in the following words; *Yes, it has great importance in the education sector because students and teachers get different knowledge through the use of Information technology in schools (MSEO-Morogoro, 14/05/2019.11:30hrs.).*

Heads of the schools were also very appreciative on the application of blended learning. This indicated their optimistic attitudes towards the use of blended learning approach in schools. The key informant from Kilakala shared a lot about her feelings and appreciations concerning BL, to paraphrase some of her expressions:

The blended learning has come to us very late, but it is a very important approach to be adhered by all teachers and learners. It provides the skills of technology on how to use computers, as you may be aware that the use of ICT is currently the vision of the government...in addition, I think that BL would help our student to have positive look of information technology facilities as source of knowledge and not just search for useless things (Kilakala Headmistress, 11/05/2019.09:00hrs).

Both teachers from Kola hill and Kilakala secondary schools who took part in the study through interview were also of the view that blended learning is an important method to be used by teachers and students since it offers large scope of learning and teaching. One of them had this to say:

BL helps a teacher to provide a lot of materials for a short time. This approach helps students to understand more while exposing real objects that support students to understand in the fastest way (Kilakala Teacher, 10/05/2019.09:30hrs)

The emphasis from the sharing of the respondent was that BL provides wide chance for teachers to access materials from different websites and it facilitates students learning of new notions. From Kola hill secondary school, the respondent teacher shared the following in addition:

This approach enables teachers and students to interact more easily and quickly when a need is created. Through this technique, various materials can be disseminated and accessed without obstacles. In short BL is an important means as it motivates students to learn by doing (Kola hill Teacher 08/05/2019-12:00hrs.).

It is worthy to note that BL approach is perceived to facilitate interaction of teacher and students, easy dissemination of knowledge and information as well as motivating learners through practical learning.

The interviewed students were not far from the perspectives of teachers and other former key informants. They also shared a positive attitude towards the use of blended learning. Among them was the student from Kola hill who shared his excitement by the following words:

I like it, it has made enabled me to know how to use computer in learning. This type of learning has helped us to enjoy learning as we may find materials by ourselves or get assistance from teachers (Kola hill Student, 08/05/201915:00hrs).

The study found that students were able to acquire computer literacy and use the facilities to search for necessary materials for learning which implies a participatory method in knowledge acquisition process.

The descriptive responses were as well gathered to provide a comparative look at the attitude of respondents. In order to get the wide picture of the respondents' attitudes towards the importance of blended learning, the study used a very simple Cross

tabulation method that just provided the percentages of teachers responses provided as presented in the Table 4.3.

Table 4.3: Attitude of respondents on the use of blended learning approach

Cross tabulation: Please justify your answer * Do you think blended learning have any importance?					
Please justify your answer			Do you think blended learning has any importance?		Total
			Yes	No	
	It simplifies learning and can be used in large coverage	Count	8	3	11
		% within Please justify your answer	72.7%	27.3%	100%
		% within Do you think blended learning has any importance?	40%	37.5%	39.3%
	It helps to motivate students learning by visual and simulations	Count	9	2	11
		% within Please justify your answer	81.8%	18.2%	100%
		% within Do you think blended learning has any importance?	45%	25%	39.3%
	It improves students' interest and critical thinking	Count	2	3	5
		% within Please justify your answer	40%	60%	100%
		% within Do you think blended learning has any importance?	10%	37.5%	17.9%
	It provides and supports learning and teaching modern facilities	Count	1	0	1
		% within Please justify your answer	100%	0.0%	100%
		% within Do you think blended learning has any importance?	5.0%	0.0%	3.6%
Total		Count	20	8	28
		% within Please justify your answer	71.4%	28.6%	100%
		% within Do you think blended learning has any importance?	100%	100%	100%

Source: Field data (2019)

The results in Table 4.3 show that 71.4 % of respondents agreed that blended learning was important with different justifications. The mentioned justifications were that; BL simplifies learning and can be used in large coverage, it helps to motivate students learning by visual and simulations, it improves students' interest and critical thinking and it provides and supports learning and teaching modern facilities.

In general, the study found that stakeholders had positive attitudes towards the blended learning. The use of blended learning in schools was believed to provide technological skills on usage of computers(get computer literacy), helped students to have positive look of ICT facilities as source of knowledge, simplified access to materials for teachers from websites, facilitates students learning, facilitates interaction of teacher and students, and enhances easy dissemination of knowledge and information. In addition, BL motivates learners via practical learning, and proved to be participatory method in knowledge acquisition process. Further, the BL was conceived to provide and support learning and teaching through modern facilities, it improves students' interest and critical thinking and simplifies learning and can be used in large coverage. The descriptive findings also were in support of the narrative findings since 71.4% of respondent perceived BL to be important in schools.

4.4 The support of school learning environment in the adoption of BLA

The second objective of the study was to assess the school learning environment that are supportive for the adoption of blended learning approach in selected secondary schools of Kola hill and Kilakala.

4.4.1 Teachers' assessment of the school facilities that support BLA adoption

The assessment of the school environment was mainly based on observing six aspects like the availability of computer laboratory, availability of electricity, availability of computer experts, and availability of ICT facilities. Data were collected through questionnaire and observation methods and presented in Table 4.4.

Table 4.4: School environment that supports blended learning approach

School Environment variables	Results (N=28)							
	Strongly agree		Agree		Disagree		Strong disagree	
	F	%	F	%	f	%	F	%
Availability of computer lab	10	35.7	14	50	2	7.1	2	7.1
Availability of stable electricity	12	46.4	5	17.9	1	3.6	2	7.1
Availability of computer expert	9	32.1	13					3.6
Availability of ICT facilities	6	21.4	12	42.6	7	25	3	10.7

Source: Field Data (2019)

Table 4.4 shows that respondent perceived the existence of all implements could support the implementation of blended learning approaching schools. Taking the cumulative sum of strongly agree and agree on one side and the strongly disagree and disagree on the other side, the study revealed that 85.7% of respondents agreed that schools have computer laboratory, 99.2% of respondents agreed that schools have stable electricity, 78.5% of respondents affirmed that schools have computer experts, and finally 64% of respondents agreed that schools have ICT facilities.

4.4.2 Students' opinions about the school environment in supporting BL adoption

The attempt to understand the extent to which schools are conditioned to practice blended learning, the researcher inquired student to provide their views as to whether the school environment supports the implementation of blended learning approach. The results of the answers are described in Figure 4.2.

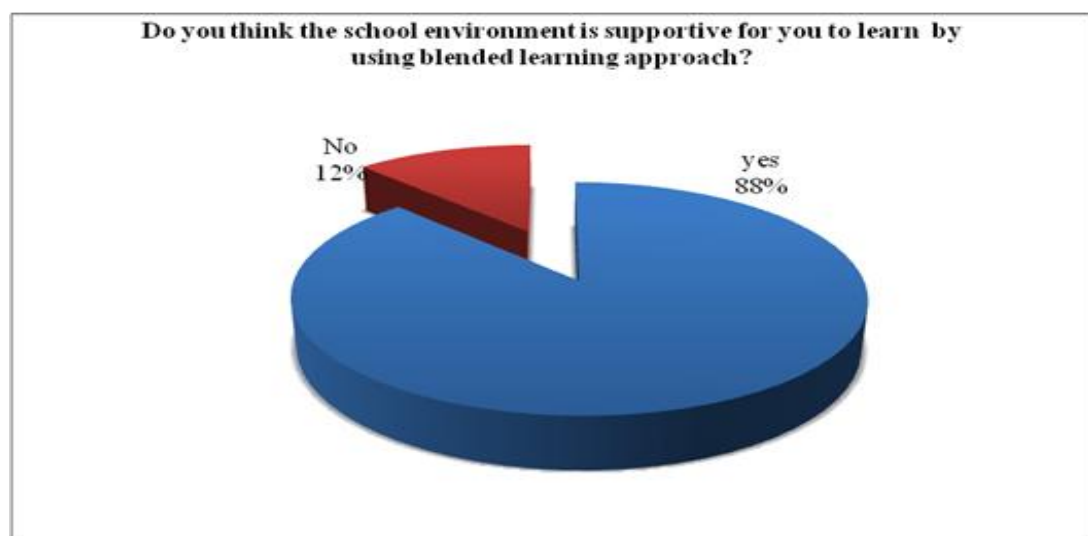


Figure 4.2: The perceived support of school environment in adopting blended learning

Source: Field data (2019)

The results in Figure 4.2 show that 88% of respondents conceived that the school learning environment is supportive of the adoption of blended learning approach.

4.4.3 Inventory of electronic and ICT facilities used in blended learning approach

The study further inquired about the existence of some electronic and ICT facilities that were present in each school and that they are used for blended learning approach. Students provided an inventory of ICT facilities that were present in the school. To understand the kinds of appliances present in each school, the simple cross tabulation method was applied and results are provided in Table 4.5.

Table 4.5: Inventory of supportive facilities for blended learning approach

Cross Tabulation					
Name of the electronic/ICT facility * Name of Secondary School					
Count		Values	Name of Secondary School I		Total
			Kola hill	Kilakala	
Name of the electronic/ICT facility	Desktop	Available	16	17	33
		Not available	0	0	0
		Total	16	17	33
	Laptop	Available	16	16	32
		Not available	0	1	1
		Total	16	17	33
		Available	2	0	2
		Not available	14	17	31
		Total	16	17	33
	Radio	Available	1	3	4
		Not available	15	14	29
		Total	16	17	33
	iPod/ tablet	Available	14	15	29
		Not available	2	2	4
		Total	16	17	33
	LCD projector	Available	1	0	1
		Not available	15	17	32
		Total	16	17	33
	e-Book	Available	15	15	30
		Not available	1	2	3
		Total	16	17	33
	TV	Available	0	4	4
		Not available	16	13	29
		Total	16	17	33
	DVD player	Available	0	0	0
		Not available	16	17	33
		Total	16	17	33
	Internet cable	Available	16	17	33
		Not available	0	0	0
		Total	16	17	33

Source: Field Data (2019)

Table 4.5 shows that some facilities were available in both schools while some were not present in all of the schools. The following electronic and ICT facilities were available in both schools: Desktop, Laptop, LCD projector and Internet cable.

The other facilities like Radio, iPod tablet, e-Book, TV and DVD player were not available in the two schools. In line with the descriptive findings, non-participant observation was conducted among selected secondary schools to find out whether some of the observable facilities were present in schools. The findings revealed that selected secondary schools had the following facilities: well-furnished computer labs, the internet and electricity which allow both teachers and students engaging in fruitful and successful learning via blended learning approach. Figure 4.3 presents some of observable ICT facilities in supports of blended learning approach.



Figure 4.3: Computer laboratory and installed ICT facilities

Source: Field Data (2019)

Figure 4.3 provides evidence that at Kola hill secondary school there is a well-furnished computer laboratory with some of the ICT facilities. It was found that all the selected secondary schools had computer laboratories which are requirements for the implementation of blended learning approach. In this regard, it was disclosed that selected secondary schools were capable of engaging in blended learning approach.

4.4.4 Presence of Computer experts in the schools

The existence of electronic and ICT facilities in the computer laboratory could serve very little if the schools lack computer or/and IT technocrats. Following this situation, the study went further by probing respondents during the interview as to whether schools have computer experts who could collaborate with teachers in the course of implementing blended learning approach to enhance teacher teaching and students learning through multiple activities. The following extracts generated from several respondents during interview cemented our understanding:

We do not have a permanent computer expert at the school, but whenever there is a problem I have noticed that there is a man out of the school used to handle the situation. However, most of the time I have seen two teachers who are helping others. I don't know exactly if they are well vested with the IT things (Kola hill Student, 08/05/201912:00hrs).

In Kilakala secondary school, the student shared the following in response to the presence of computer expert in the school.

I have never seen specialised computer expert working here in the school apart from teachers who are knowledgeable about computer application. They are the ones we refer to computer experts since they help us a lot. However, I once observed a person from outside who came and arranged the internet connections as well as trying to explain some issues to our teachers (Kilakala student 10/05/201914:15hrs)

It appears that in Kola hill secondary and Kilakala schools used to hire a computer expert from outside in case of great need. Otherwise, there some teachers who act as IT experts but not fully employed for that purpose.

4.5 The application level of BL Approach the Secondary Schools

The third objective was to assess the usage level of a blended learning approach in selected schools. In the course of substantiating the application level of blended learning approach, the study developed three indicators which could provide a picture on the extent to which blended learning approach was used. These indicators include the rate of teachers trained in BL application, the extent to which BL is used for students and the possible challenges encountered in the application of blended learning approach. The study presupposed that the level of adoption of blended learning was indicated by the number of trained teachers, awareness of users about BL approach, the level of BL application, and the limited number of challenges in its application.

4.5.1 The rate of teachers who received in-service training for using blended learning approach

Teachers were asked to provide their responses as to whether they had received in-service training about the application of blended learning approach. The descriptive results are provided in the figure 4.4.

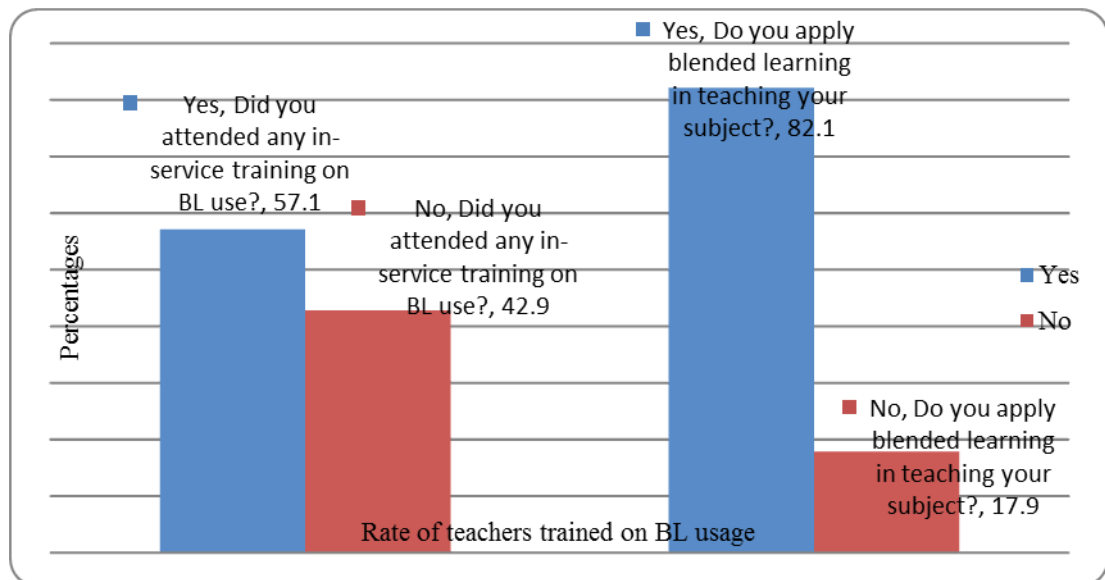


Figure 4.4: Rate of teachers trained for using Blended Learning Approach

Source: Field Data (2019)

Based on the results presented in Figure 4.4, respondents who received training composed 60% of the teachers. And 40% of respondents did not receive the in-service training regarding application of blended learning approach. The study found that about two-third of the respondents received the in-service training on application of blended learning approach to enhance their teaching and learning. On the other hand, 80% of respondents attested to apply blended learning approach in their subjects. These results suggest that the application of blended learning approach in studied secondary schools is at high level.

4.5.2 The extent of blended learning usage in selected schools

Having known that blended learning approach has been applied in secondary schools and that teachers reported to have been receiving in-service training, the next step was to analysis the level of application of blended learning approach. Teachers and students were provided with the similar questions measured in four levels Likert scale (*very highly applied, moderately applied, lowly applied and least applied*). Figure 4.5 provides the results generated from both teacher and students response.

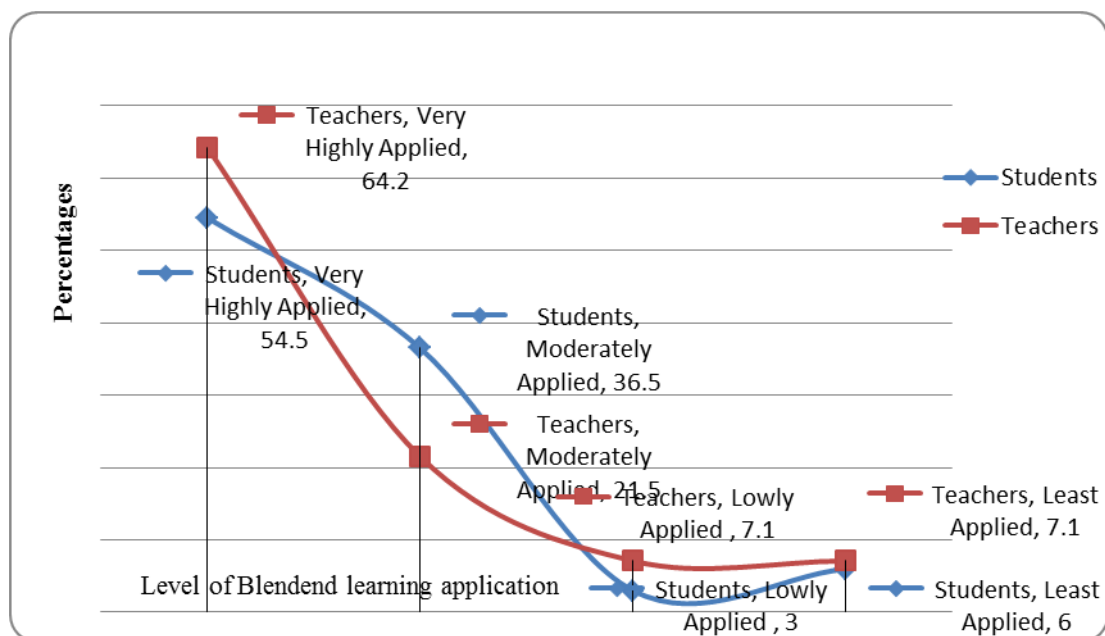


Figure 4.5: The level of Blended learning application in schools

Source: Field data (2019)

It was evidenced from the figure 4.5 that blended learning approach was very highly used in the selected schools as perceived by 64% of teachers and 54% of students. However, 35% of students and 21% of teacher conceived that blended learning was moderately applied in the schools. The study contends that the extent of usage of blended learning approach in the school was relatively high by 60% by accounting the mean of the two responses. The descriptive statistical results were congruent with the explanations provided by the key informant of Kola hill secondary school concerning the application of blended learning approach. He asserted that:

We have got the privilege to profit from one of the noble projects on the use of blended learning approach. Actually, we are part of the participants of the project as pilot study. I am impressed with the response of my fellow teacher, since they have well received the project and they are devoted to make the blended learning a basic model of teaching. In short, almost all teachers apply the methodology in their lessons (Kola hill KI, 09/05/201914:45hrs).

The words of the head of school implied that the blended learning is highly applied in the school, but also a note was put that the practice was in the pilot study.

4.5.3 Challenges facing application of blended learning approach

Together with the impressive findings on the application of blended learning approach in the schools, the study probed on the possible difficulties that are encountered in the course of implementing the blended learning approach. The question was generally directed to teachers who shared their experience through questionnaire and interviews.

Teachers were asked to answer in the questionnaire as to whether the mentioned factors form part of the challenges that limit the application of blended learning in the school. The descriptive results are provided in the Table 4.6.

Table 4.6: Challenges for the Use of BL

School Environment variables				Results N=28							
				Strongly agree		Agree		Disagree		Strong disagree	
				f	%	f	%	f	%	f	%
Poor infrastructure				1	3.6	11	39.3	9	32.1	4	14.3
Lack of sufficient competent IT technicians				6	21.5	16	57.1	3	10.7	3	10.7
Lack of institutional support				3	10.7	15	53.5	5	17.9	5	17.9
Insufficient of hardware and software				6	21.4	20	71.4	1	3.6	1	3.6

Source: Field data (2019)

To analyse the results in Table 4.6, the researcher considered values of strong agree and agree as implying acceptance and the values of strong disagree and disagree to mean refusal of the proposition. Basing on the analysis procedure, the study found that poor infrastructure was not a perceived problem as it was refused by 46.4% and accepted by 42.9% of respondents. The lack of sufficient competent IT technician was perceived to be a problem by 78.5% and it was not perceived as problem by 21.4% of respondents. Lack of institutional support was found to be a problem by 64.2% while 35.8% of respondents refused it being a problem. Finally, insufficiency of hardware like computers and software such internet connections were conceived to be a problem by 92.8% while 7.2% denied it being a problem.

The study found that the possible challenges that faced the implementation of blended learning are lack of sufficient competent IT technicians, Lack of institutional support and insufficient hardware and software facilities. However, the poor infrastructure was not decisively rejected as a challenge since the range of variation was very small between the group of those who denied and those who accepted.

According to Key informants, the researcher came across some elaborations which facilitated the understanding of some of the mentioned challenges from the descriptive statistical findings. The heads of the schools provided some brief information on the incumbent problem regarding the application of blended learning.

The headmistress of Kilakala mentioned different issues relating to the possible challenges that intervene in the application of blended learning approach. She shared that:

In our computer laboratory, the ICT facilities that were installed are of poor quality computers and equipment that result in poor teaching. It takes long for the computer to start up a programme and with regard to internet connection that is another sad story. (Kilakala,11/05/2019 09:00hrs).

In the same vein the headmaster of Kola hill added some more information pertaining to the challenges that limit the application of blended learning. His focus was on the policy and implementation. He started with an exclamation remark in the following words:

It is no wonder that the government is doing the best in education, but there is one challenge I see. I see inconsistency between the policy plan and its realization. There is the problem, see here we are told that secondary should be taught ICT but no fund is allocated for that. The institutions are left to struggle on their own to solicit projects, but how far will this go and the project donors close up the deal? (Kola hill KI, 09/05/2019-14:45hrs).

It was found that public secondary schools have installed some ICT facilities of poor quality, face internet connection problems and lack financial support to assist in building ICT infrastructures. In addition, there is internet problems/accessibility and few devices to accommodate students.

4.6 Summary of chapter four

The chapter has presented the research findings basing on the three specific objectives as developed in chapter one. In the chapter, it was found that stakeholders have high theoretical understanding of and positive attitude towards the practice of blended learning approach in the schools. The schools' environment were found to be supportive for the adoption of the blended learning approach since there were computer laboratories, installed electricity, internet cables and computer experts and ICT facilities. In the third objective, the rate of application of blended learning was found to be high since about two-third of teachers were trained, and there were necessary implements.

However, the impending challenges facing the application of blended learning include lack of sufficient competent IT technicians, lack of institutional support and deficiency of hardware and software.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The chapter discusses the research findings that are presented in chapter four. The mode of discussion adhered to the sequence of specific objectives. In the course of discussion, different works of scholars who have researched on the similar issues are employed for the sake of affirming or clarifying the findings of the present study.

5.2 Perceptions of stakeholders on the adoption of blended learning approach

The study found that respondents have a high standard of theoretical understanding of blended learning, positive attitude towards the practice of blended learning approach in the schools.

5.2.1 Respondents' Theoretical Understanding of Blended Learning

In the study, respondents shared their points of view regarding the meaning of blended learning approach. The concept blended learning approach was understood as the method of using modern ICT technology in combination with traditional methods for teaching and learning process and it can take place inside or outside the classroom. Other respondents defined blended learning as an approach of learning through technology and traditional methods like use of computer, projector and other ICT facilities. These definitions affirmed that respondents understood about the phenomenon to which the study indented to get detail information.

The understating of respondents concerned with other scholars who attempted to provide the meaning of blended learning. Usta (2007) asserted that blended learning is the type of learning that combines traditional face to face model, with e-learning model, thus benefiting from both methods, and creating a good learning experience. Another scholar, Karamustafaoglu (2009) perceives blended learning as an active learning that improves retention, as well as the application of course content and listening to peers, exposes students to different viewpoints and ways of interpreting and applying course material. This conception of BL is more purposive at providing

the message about objectives of blended learning in the school. Ndibalema (2014) further asserted that the process of applying blended learning includes amalgamating of the two approaches; the classroom face to face and the ICT or e-learning methods. While the traditional approach involves development of strong systems like social ties, expression and respecting other views, the distant learning creates the value of self-reliance, confidence and individual discipline as well as inculcating the ability to communicate with others online (Lalima & Dangwal, 2017).

5.2.2 Attitudes of stakeholders on the usage of blended learning approach

The implementation of BL was believed to enhance knowledge transfer like technology and ICT literacy, and improved classroom interaction. In addition, BL made student active and partners in knowledge creation, motivates students and creates critical thinking and finally the approach covers large scope. Several studies have been done in relation to the findings of current study. Lo *et al.* (2011) found blended learning to be useful in accessing learning materials. Through internet connection students and teachers could access different websites and blogs that were rich in materials like textbook, and notes for students via internet or the use of mobile phones. Likewise, Vernadakis *et al.* (2011) identified that blended learning approach was used to create a student-centred learning environment which motivates active and deep learning in students. The practices of student-centred learning strategies enable teachers to deliver information and related subjects design on a different type of activities such as presentations, laboratory-based software development activities, demonstrations, group discussions and peer-teaching.

Ndibalema (2014) was in support for the current study since in his study the attitude of teacher was positive though the practice was low. The main reason was due to lack of knowledge of using ICT facilities, and some teachers doubted the credibility of the BL approach in enhancing good examination results. Similarly, Leithner (2009) reported that blended learning approach had been used to create motivating learning environments for students. The technology of internet connection provided unlimited alternatives for students to select the kind of learning materials of choice depending on the needs of the time.

It suffices to contend that the positive attitude found from the respondents was valid and sound since the practice is of great importance to both learners and teacher's in as far as academic excellence is concerned.

5.3 The school learning environment in support of blended learning adoption

The second objective assessed how school environment support in the adoption of the blended learning approach. The essential findings of the study in this objective are categorised into two: the affirmation that schools have supportive environment for the adoption of blended learning, and the second that derives from the first is that the schools have the necessary implements for the adoption of blended learning approach.

5.3.1 The schools' environment support the adoption of blended learning approach

Schools learning environment supported blended learning approach because they had various equipments such as computer laboratory, have stable electricity sources, computer experts and ICT facilities. The presence of these elements or entities affirmed that blended learning could be carried out in respective schools. The study findings are supported by the findings of Olgun (2009). In his findings, he claimed that the existence of ICT facilities in secondary schools facilitated the creation of conducive environment for the use of both traditional and modern methods in teaching and learning. In the recent time, ICT networking in schools enhanced the teaching approach and impressing students to like the subjects.

5.3.2 Deficits of ICT facilities in Schools

The study found that, even though schools had many facilities that support blended learning to be used, there are some of the electronic and ICT facilities that were not available. The study found that the kinds of ICT facilities that were present in the schools and were used for the blended learning include Desktop, Laptop, LCD projector, android and Internet cable. However, the statistical results found that other useful implements like Radio, iPod tablet, eBook, TV and DVD player were not available in the two schools. It appeared that in Kola hill and Kilakala secondary

schools used to hire a computer expert from outside in case of great need. Otherwise there some teachers who act as IT experts but not fully employed for that purpose.

Though the unavailability of such facility in another occasion where blended learning is used, the study contends that school demand further investments to be done for the missing facilities. There are studies which further proved that most schools and colleges in developing countries lack essential ICT facilities despite the present of perceived emphasis on the use of ICT tools as instrument for teaching and learning (Condie & Livingstone, 2007; Almadhour, 2010; Nihuka & Voogt, 2011).

5.4 The level of application of blended learning approach in secondary schools

The third objective aimed to assess the extent to which blended learning was applied or used in selected schools. The study probed on the rate of a teacher trained on the usage of blended learning, analysis of the level of application of blended learning, and finally investigated on the possible challenges limiting the use of blended learning approach in schools.

5.4.1 The importance of training teachers in blended learning application

It was found that 60% of teacher got in-service training and 40% of teacher did not. The ratio of trained teachers was high equivalent to two-third of the respondents. The importance of teacher training on using blended learning was found in the level of application of the approach. Teachers could only provide the knowledge they have acquired. It followed that the remaining forty per cent of teachers needs to be reduced to zero since all teachers are supposed to have proper practical skills about the use of blended learning. Different scholars supported the argument of the study about teacher training on blended learning. Lalima and Dangwal (2017) assert that among the preconditions for the use of a blended learning approach is to have well-trained teachers. Teachers are supposed to be vested with knowledge and skills to combine traditional and technological methods in a classroom interaction. Also, the teacher should be aware of online communication with students to link students and mentor them in their studies. All these could only be possible when teachers are

acquainted with knowledge of surfing blogs, websites, and other networks (Lalima & Dangwal, 2017).

5.4.2 Schools have a high level of applying a blended learning approach

The study found that blended learning approach was perceived to be profoundly applied by 60% of the respondents. Similarly, the narrative findings cemented on the observed results from the descriptive statistical findings. However, one of the critical informants informed that the approach is under pilot study, possibly the impressive findings are due to the invested efforts of the project donors. It would be interesting to find out the sustainability of the practice in the coming years.

5.4.3 Schools experience some challenges related to the usage of blended learning

It was observed that there are some challenges that limit the application of blended learning in schools. Among them include; lack of sufficient competent IT technicians, lack of institutional support and insufficiency of hardware and software. Others were poor quality of installed ICT facilities and internet connection problems. The findings concur with what Egidio *et al.* (2018) stated in his study. He posited that in African countries, most schools have poor ICT infrastructure and facilities as well as lack of ICT knowledgeable teachers. Many schools have a policy that teachers must attend training; some teachers attended basic ICT course. However, financial restrictions on teacher training result in a low number of actual participants.

Graham and Allen. (2009) further recommended that the school should have infrastructures, good classroom and well-furnished computer laboratories with a sufficient number of computers to satisfy to all the students in a single class and the internet facility. These documented studies have provided a delightful clarification on the finding of the present study, but also expanded the horizon of the present study since its findings appear to be well related to many of the previous scholarly works.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The chapter presents the study summary, conclusion and recommendations. It commences with the summary of the study, draws conclusion, highlights policy implications and finally, the recommendations are provided thereof.

6.2 Summary of the study

The study focused on identifying stakeholders' perceptions on adoption of blended learning approach in selected secondary schools of Kola hill and Kilakala in Morogoro municipality. The objectives were to identify the stakeholders' perception on the adoption of blended learning approach, assess school learning environment that supports blended learning approach and the extent of use of blended learning approach in selected secondary schools. A descriptive case study design was employed. Both purposive and simple random sampling techniques were used to select respondents and a sample size of 70 respondents was attained. Data were collected by interview, questionnaire, observation and documentary review methods. The analysis procedures involved were content analysis for qualitative data and descriptive statistical analysis was used for quantitative data.

The study found that respondents have the high theoretical understanding of blended learning. The concept blended learning approach was understood as the method of using modern ICT technology in combination with traditional methods for teaching and learning process and it can take place inside or outside the classroom. It was also conceived as an approach of learning through a combination of technology and traditional methods like the use of computer, projector and other ICT facilities.

Again, stakeholders had a positive attitude towards the practice of the blended learning approach in the schools. Stakeholders believed that blended learning in schools helps to impart technical skills and computer literacy, creates positive mentality about ICT technologies, improves teacher –students' class interactions and

participation in learning, and facilitates teachers and students to access materials and knowledge dissemination.

The second objective found that the selected schools were perceived to have a supportive environment for the adoption of blended learning by 88%, and the schools have the necessary implements for the adoption of blended learning approach. The two selected schools under study possessed a computer laboratory, stable electricity sources, computer experts and ICT facilities. Schools possessed Desktops, Laptop, LCD projector, android and Internet cable, but missed some important ICT facilities like Radio, iPod tablet, EBook, TV and DVD player.

The third objective assessed the extent to which blended learning was applied or used in selected schools. It was found that two-thirds of teachers were trained on the use of blended learning. The application level of blended learning in selected schools was high by 60 %. However, schools started to experience some challenges related to the usage of blended learning. The significant challenges were lack of sufficient competent IT technicians, lack of institutional support and insufficiency of hardware and software. Others were poor quality of installed ICT facilities and internet connection problems.

6.3 Conclusion

Basing on the findings and discussion of the finding, the study concludes that stakeholders perceive blended learning approach as an essential and useful methodology to be applied in teaching and learning. Though the internet connection was poor and sometimes unstable, students and teachers used to connect to internet cables through phones possessed by individual teachers. The learning environment in the selected secondary schools was found to have computer labs, electricity, few competent experts and ICT infrastructures that were used by teachers. The environment facilitated the networking of teachers and improved the teaching approaches and methods where students were able to follow and enjoy what was taught.

Further, the high application of blended learning approach empowered students to participate actively in the creation of knowledge, and thus it enhances student to like schooling and improves their academic performances. However, the encountered challenges such as poor infrastructure, lack of institutional support and insufficient ICT hardware and software facilities can be resolved through the collaboration of government and education donors.

6.4 Policy implications

The research findings revealed that stakeholders are interested in the use of blended learning approach in schools. This calls for government policy action to extend and stabilise the approach to be implemented in other schools across the country. Similar to the extension of BL application, the additional notable step is to revise the education curricula at all levels for them to address the issue of application of Blended learning in the school. The study found that good number of teachers received the training on the application of blended learning. The decision-makers in the sector of education and professional training should view the need to improve the practice of in-service training for teacher and other education officers the use of information technology.

The government should also foresee the possibility to recruit and employ sufficient IT technicians in schools for the sake of facilitating the sustainability of the project for the great benefit of teachers, learners and the community at large. The effort to integrate technology in the school curriculum implies costs for the investments that mean the urgent demand of increasing the budget allocation on this sector as well through the school development funds. This is because, for schools to make blended learning approach a success, there should be supportive school infrastructures, stable and alternative electricity sources as well as quality facilities. Together with the hardware electric appliances, the schools are supposed to have stable internet connection to surf in different academic websites.

6.5 Recommendations

In the light of the above results the following are the recommendations;

- i) Enhancement of Blended learning approach should ensure that benefits attained are maintained as the perception among beneficiaries seemed to be of importance.
- ii) The learning environment needs to be enhanced with a full supply of equipment necessary to facilitate teaching and learning. Issue such as competent experts, sufficient ICT infrastructures are reliable and electricity is essential
- iii) The obstacles such as poor infrastructure, lack of institutional support and insufficient hardware and software facilities need to be eliminated for the thorough facilitation of teaching and learning.

6.6. Contributions of the study

The study contributes on the theoretical and methodological aspects in the body of research. Each of the aspects has revealed its novelty upon the realisation of the study.

6.6.1 Theoretical contributions

The study has revealed that secondary school teachers have positive perception about need to apply blended learning methods in teaching and learning process. The impressing perception has to do with willingness to acquire new skills and technology that contributes to the ability of teachers to implement BL methods. Theoretically speaking, the study stands out to inform that the implementation of BLA in schools could only be successful if three factors are met: individual competence of IT application, installation of necessary IT implements and teacher motivation to apply BLA in teaching.

6.6.2 Methodological contribution

The study demonstrated that triangulation methods could be used to study the perception of users of BLA stakeholders. The study stressed on qualitative methods and then linked to the descriptive methods of data analysis. It followed that, the study

provide a plausible contribution on the possibility of using qualitative methods in understanding about BLA. Most of the previous studies have focused on the analysis of BLA from the quantitative perspective which misses the descriptive aspects of the phenomenon.

6.7 The limitation of the study

The study was conducted in Morogoro municipality and involved two schools, and the study focused on perceptions of stakeholders about the adoption of blended learning. The findings of the study were mainly qualitative hence subjective due to the reliance on researchers understanding of the content of the study. The study used a sample of two schools found in Morogoro municipality which limits its ecological validity.

6.8 Areas for Further Research

The study suggests the following issues be studied in the future.

- i. It follows that there is a need to conduct another study by including a greater number of schools and increase the number of other stakeholders as participants for the study.
- ii. The content of the study has basically focused on understanding the practice of the approach in schools; a quantitative study could be useful to examine the relationship between the use of blended learning approach and student performance.
- iii. It is evident that the use of information communication technology facilities in schools is a new paradigm, and the traditional look is to prevent the young generation from the adverse effects of accessing information from unwanted websites and social network sites like YouTube, Instagram and the like, however little is known about the preparedness of teachers to facilitate decent use of these facilities to students.
- iv. Another new area for further research could be related to the assessment of the relationship between teacher level of ICT mastery and the use of ICT

knowledge in teaching lesson. This is to learn whether knowledge of ICT is a necessary factor for teacher to implement BL approach.

- v. Finally, the study could be needed to investigate on perceptions of parents/community members about the school use of modern technology in teaching and learning.

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APPENDICES

APPENDIX I

QUESTIONNAIRES FOR TEACHERS

I am Tusekile Mwamkinga, a student at Mzumbe University (MU). I am conducting a study on *“Stakeholders’ Perceptions on Adoption of Blended Learning Approach in Selected Secondary Schools in Morogoro Municipality, Tanzania”*. This research is purely for academic purpose. It is partial of fulfilment of the requirements for award of Master’s Degree in education (MAED) of Mzumbe University. Your information will remain confidential, thus even your name is not asked anywhere in the questionnaire. The success of research depends on heavenly your willingness to cooperate by providing collect and objective answer.

INSTRUCTIONS; Please put a tick [☐] to the answer of your choice or write in the space provided as the case may be.

1. Name of your school-----

2. What is your Gender?

a. Male (☐)

b. Female (☐)

3. Education level;

a. Diploma (☐)

b. Degree (☐)

c. Masters (☐)

4. Work experiences;

a.5-10 years (☐)

b.11-15 years (☐)

c.16-20 years (☐)

d.21 and above (☐)

5. Subject you teach;

- a. Science ()
- b. Social science ()
- c. Commercial ()
- d. Language ()

6. Do you understand the concept of blended learning in teaching secondary school?

- a. Yes ()
- b. No ().

If your answer in question 6 is Yes please provide meaning of blended learning-----

7. Do you apply blended learning approach in teaching your subject?

- a. Yes ()
- b.No ()

8. To what extent blended learning approach is used in your teaching?

- a. To large ()
- b. Moderate ()
- c. Not ()

9. Do you think blended learning is any importance?

- a.Yes ()
- b.No ()

Please justify your answer

i)-----

ii)-----

10. Did you attended any in-service training on how to use blended learning approach in teaching your subject

- a.Yes ()
- b.No ()

10. Do you think the environments are supportive for you to teach by using blended learning approach?

- a.Yes
- b.No

if your answer in question 10 above is Yes/No explain why-----

11. What are the uses of blended learning approach in your school? -----

12. What should be done by government to improve school on how to use blended learning approach for secondary schools? -----

13. What do you suggest to government and other educational stakeholders as well as educational policy makers on the adoption and use of blended learning approach in secondary school? -----

14. Please indicate your agreement or disagreement regarding the learning environment as follows; 1) SD=Strongly Disagree. 2) D=Disagree 3) U=Uncertain 4) A=Agree 5) SA=Strongly Agree

Learning environment	Choice				
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Availability of Computer lab					
Availability of electricity					
Availability of computer expert					
Availability of ICT infrastructure					

15. Please indicate your agreement or disagreement regarding the use of the blended learning approach as follows; 1) SD=Strongly Disagree. 2) D=Disagree 3) U=Uncertain 4) A=Agree 5) SA=Strongly Agree

Use of blended learning approach	Choice				
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Poor infrastructure					
Lack of technical competence					
Lack of institutional support					
Availability of hardware and software					

Thank you

APPENDIX II
QUESTIONNAIRE FOR STUDENTS

Dear students,

Your kindly request to read each question and give your response to the best of your knowledge. Your answers will be treated confidential. Do not write your name on this questionnaire. It expect that your views will help to improve the teaching and learning in your school. Please be very open of frank in answering the following questions.

1. School name-----

2.What is your gender?

a. Male()

b. Female()

2. Education level;

a. Form one ()

b. Form two()

c. Form three()

d. Form four()

3. Do you know anything about the concept of blended learning?

a.Yes ()

b.No ()

If your answer in question 3 is Yes what is the meaning of blended learning?-----

4. In your views should blended learning approach have any important?

a.Yes

b.No

If yes, which subject? -----

5. To what extent your teachers apply blended learning in teaching your subject?

a.To large ()

b.Moderate ()

c.Not ()

6. Are you interested in studying subject by using blended learning?

a. Yes ()

b. No ()

7. In your school which technological devices are available at your school that teachers have used to teach/demonstrate something? (Tick all that apply)

Devices	Tick
Desk computer	
Laptop	
IPad/tablet	
LCD Projector	
Radio	
E book	
Android	
TV	
DVD player	
Internet	

8. Do you think the environments are supportive for you to learn by using blended learning approach?

a. Yes

b. No

. If the answer in question 8 above is Yes/ No explain why -----

9. Is there anything you would like to share with me concerning the adoption of blended learning approach in secondary school? -----

Thank you

APPENDIX III

INTERVIEW GUIDING QUESTIONS FOR HEADS OF SCHOOLS

1. What do you understand about blended learning?
2. Have you received any ICT resources from government to support blended learning approach in secondary school?
3. Have your teachers undergone any in-service training seminars in blended learning approach?
4. What are supportive environments for adoption of blended learning?
5. In a long term plan, what strategies are in place to make sure all teachers at your school use blended learning?
6. As a school, how do you help students to use blended learning in their study?
7. What are the efforts made by government to support all teachers in your school to use blended learning approach?
8. How are learning environments supportive for the adoption of blended learning approach in selected secondary schools in Morogoro Municipality?

APPENDIX IV

INTERVIEW GUIDING QUESTIONS FOR MSEO

1. What do you understand about blended learning?
2. How do you see blended learning? Is it important? How?
3. Do you have a budget for blended learning training to the teachers in your Municipal?
4. How often do you conduct such seminars of blended learning to the teachers in a year?
5. What subjects are mostly considered in the programme?
6. In your opinion do you think blended learning approach is important?
7. What are supportive environment for adoption of blended learning in secondary school?
8. In a long-term plan, what strategies are in place to make all teachers use blended learning approach?
9. What are stakeholders' perceptions on adoption of blended learning approach in selected secondary schools in Morogoro Municipality?

APPENDIX V

INTERVIEW GUIDING QUESTIONS FOR QUALITY ASSURERS

1. In your own understand would you please provide meaning of blended learning?
2. How do you see blended learning approach? is it important? How?
3. What learning environments which are supportive for adoption of blended learning approach?
4. What is government support to blended learning approach in secondary school?
5. In your opinion do you think blended learning is important?
6. To what extent blended learning approach is used in selected secondary schools?
7. To what extent is blended learning approach used in selected secondary schools in Morogoro Municipality?

APPENDIX VI

OBSERVATION CHECKLIST

School name:.....

Date.....

The researcher is supposed to put tick () or to take note

Blended learning environment	Response
1.Computer lab	
2.Electricity	
3.Computer experts	
4.ICTs facilities	
5.Internet cable	