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COLLEGE OF EDUCATION AND LANGUAGE STUDIES

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURE

EFFECTS OF BLENDED LEARNING ON ADDIS ABABA UNIVERSITY STUDENTS' READING COMPREHENSION: COLLEGE OF BUSINESS AND ECONOMICS IN FOCUS

BY

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This is to confirm that the thesis prepared by Dagnachew Tsegaye Bekele, titled "**Effects of Blended Learning on Addis Ababa University Students' Reading Comprehension: College of Business and Economics in Focus,**" fulfills the requirements for the Degree of Doctor of Philosophy (PhD) in English Language Teaching (ELT). It adheres to the university's regulations and meets the accepted standards of quality and originality.

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DECLARATION

I, the undersigned, hereby declare that the thesis is entirely original with no submission for credit toward a degree from any other university, and that all sources of materials used for the thesis have been properly acknowledged.

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ABSTRACT

The general objective of this study was to investigate the effects of blended learning (BL) on Addis Ababa University students' reading comprehension. Students' attitudes toward blended learning-based reading comprehension were also examined. To fulfill this purpose, a quasi-experimental research design with mixed method approach was employed. In addition, from the College of Business and Economics at Addis Ababa University social science stream, four sections of freshman students were purposely selected and assigned to experimental (n=42) and control (n=42) groups. This was followed by a 12-week experiment involving students at Addis Ababa University in the first semester of the 2024/25 academic year. The same reading comprehension contents adapted from communicative English skills I course were taught to both groups. The only difference was that the experimental group was taught by a BL method that combined both online and face-to-face instructions, while the control group used the conventional, teacher-centered instruction. SPSS version 26 for quantitative data and NVivo 10 for qualitative data were used to analyze the data gathered from pre-posttests, attitude questionnaire, and focus group discussions (FGDs). Based on the analysis of the reading comprehension test results, the experimental group showed a large effect size and a statistically significant difference in reading comprehension components at the $p < .05$ level. However, the control group's reading comprehension results revealed no statistically significant differences in the pre- and posttest results. According to the results of the independent samples t-test, the experimental group scored better in all reading comprehension components than the control groups. Besides, students' attitudes toward blended learning-based reading comprehension were examined through descriptive statistics for closed-ended questionnaires and thematic analysis for open-ended questions and FGD, using Nvivo 10 software. The major findings indicated that the blended learning (BL) approach positively affected students' reading comprehension skills, with most students in the experimental group expressing positive attitudes toward it. The results leading to the recommendation that BL should be integrated into EFL classrooms to promote reading skills. Consequently, it would be advantageous to incorporate blended learning approaches that integrate online reading resources with conventional face to face instruction to improve students' reading comprehension skills at the tertiary level in Ethiopia.

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LIST OF ACRONYMS

AAU: Addis Ababa University

BL: Blended Learning

CESs I: Communicative English Skills I

EFL/ESL: English as a Foreign Language/ English as a Second Language

FGDs: Focus Group Discussions

ELT: English Language Teaching

HEIs: Higher Education Institutions

MoE: Ministry of Education LMS: Learning Management System

Moodle: Modular Object-Oriented Dynamic Learning Environment

TOEFL: Test of English as a Foreign Language

ZPD: The Zone of Proximal Development

CHAPTER ONE: INTRODUCTION

This chapter provides background information for the current study, which investigated the impact of blended learning on Addis Ababa University students' reading comprehension at the College of Business and Economics. I It begins by discussing the importance of the English language in Ethiopia, particularly in the context of higher education. Additionally, the chapter explains the research problem and highlights what makes this study different in terms of focus, methods, and reasoning, based on clear issues and related research findings. It further presents the study's objectives and hypotheses in relation to the current educational environment. The chapter continues by addressing the study's scope and significance with a discussion of its theoretical and practical contributions as well as limitations and operational definitions of key terms.

1.1. Background of the Study

Academics, business, aviation, science and technology, diplomacy, media, politics, trade, transportation, tourism, and other sectors and areas are progressively using English, and it is utilized as a medium of higher education in many nations (Addisu, 2020; Lo, et al., 2013;Cook, 2003; Institute of International Education (IIE, 2012). Consequently, the demand for good communication skills in English has increased dramatically due to the increased need for quality English language education. Learners are motivated to learn English because of these duties and responsibilities, and many businesses want their employees to have solid English abilities (Richards, 2006). Due to these reasons, this language is today referred to as a Global Language (Crystal, 2003).

By and large, the English language has established itself as a global Lingua Franca (McKay, 2003; Jenkins, 2000). In this age of globalization, English is required to build successful citizens. As a result, a strong command of the English language has long been in demand. In connection with this, the document IIE (2012) states that effective English abilities have become a need for success and progress in today's workplace and academic success. This necessitates the development of citizens capable of computing in the global arena, which has already evolved into a global community.

Accordingly, using this language appropriately can be valuable in today's increasingly local and global industries. This is to state that in today's open economy, being able to communicate effectively and fluently in English is a need for many stakeholders and customers (Gerrish and Lacey, 2010). In addition, the English language acts as a medium of communication with the international community in Ethiopia as the international lingua franca (MoE, 2007). For example, when it comes to Ethiopia's international affairs, it interacts primarily in English with foreigners and other countries. International organizations, like the United Nations (UN), the Economic Commission for Africa (ECA), and the African Union (AU), to name a few, use it (Anegagregn, 2012). Consequently, in order to communicate with the international population, national institutions, such as Ethiopian Airlines, banks, insurance companies, and the Ethiopian Telecommunication Corporation, also use English as their working language.

In general, having a solid command of this worldwide language is important from the preceding discussions. Since Ethiopia is part of the global community, it is expected to face severe competition from other countries, especially those that can communicate effectively in English. As a result, having a strong command of the English language will help us overcome worldwide obstacles, succeed in education, and address international concerns such as diplomacy, trade, and business.

1.1.1. English Language Teaching at Higher Education Institutions (HEIs) in Ethiopia

The inclusion of English as a foreign language in Ethiopian academic settings coincided with the establishment of modern education in Ethiopia. According to Abiy (2005) and Nuru (2000), following a long history of religious education in Ethiopia, modern education began in the early twentieth century with the inauguration of Menelik Secondary School in Addis Ababa in 1908. Therefore, foreign language training in the country may be dated back to the early twentieth century. Since then, as to Tirusew et al. (2018) and Mekasha (2005), English has been used extensively in the country's teaching and learning processes.

The use of English as a medium of instruction in higher education necessitates students' extensive usage of the language. It goes without saying that tertiary students use English for

academic objectives like listening to lectures, writing assignments, giving oral presentations, and reading materials pertaining to their respective fields of study. Many academic publications and online resources are indeed written in English in most subjects since it is a teaching, research, and publication language. Besides, the document, IIE (2012) magnifies that the importance of the English language in Ethiopian education cannot be understated; it has a vital place in Ethiopian education.

Furthermore, the Ethiopian Higher Education Proclamation, MoE (2009) states that English is the language of instruction of all higher education institutions; it is offered as a common course at all of the country's universities. Two English courses, Communicative English Skills I (Flen 1011) and Communicative English Skills II (Flen 1012), are compulsory courses in all universities across the country. These courses are provided to first-year students during the first and second semesters, respectively.

Despite the fact that English is currently the major medium of instruction in high schools and universities across the nation, it has not been established that students' proficiency levels in the language are high enough to allow them to pursue other subjects. According to Hailemichael (1993), Gebremedhin (1993), and Ministry o of Education (2020), Ethiopian students' English language competency is so low that they cannot continue their studies during high school and university years.

Stoddart (1986), as cited in Addisu (2020), noted that in Ethiopia, a significant majority of students at all levels have insufficient English to learn other subjects through it. Students do not have enough English to grasp what their teachers say or read in their materials, let alone participate actively through speaking and writing. The efficiency of teaching-learning has been severely harmed as a result of students' inability to function in English. Rote learning often reigns supreme, with no critical or creative participation on the part of students, and a lack of even basic comprehension of what they have read. Tsegaye (2006) and Girma (2005) also found out that the English language proficiency of the majority of preparatory students was below the expected level. Under such circumstances, Stoddart (1986), as cited in Addisu (2020), also asserts that it is no longer appropriate to call English a suitable instructional medium; instead, it has become a medium of obstruction. Due to this fact, most university instructors are heard

arguing that so many students are unable to cope with academic challenges due to a lack of English proficiency. Therefore, something needs to be done to assist students in honing their English language abilities.

1.1.2. The Role of Reading Comprehension at Higher Education Institutions

Reading is one of the royal paths to knowledge, and it is important to succeed in all academic disciplines. Besides, it plays a critical role in fostering learning and serving as an instrument through which learners can learn subjects in the curriculum (Desta &Abebe, 2023). According to Dima (2018), reading improves knowledge acquisition at all educational levels, making it one of the top learning skills. Dima (ibid) also added that educators are paying more attention to reading instruction because it is highly correlated with academic success in both school and university.

There are no academic disciplines that do not require reading due to the majority of teaching and learning resources utilized at all levels being written in English. Consequently, it accounts for a large portion of university work; students are required to read academic books to a high degree (Mendida, 1988; Abebe, 2012). For instance, they read to complete homework, pass tests and exams, and write term papers. As a result, effective reading is a necessary tool for academic success.

Besides, according to Getachew (1996) and Ermias & Taye (2018), English reading is one of the most crucial of the four language skills in situations like Ethiopia. It is currently the predominant language of learning and teaching at all educational levels (Grabe & Stoller; 2019). It is true that many academic resources are available in English; university students' ability to read and comprehend the texts of the various courses they study determines their success or failure. To put it another way, reading is where they get the vast majority of their information.

Therefore, it is essential to enhance reading comprehension skills to comprehend the meaning of texts written in English. Almost all examinations that evaluate students' English language competency are based on their ability to read and comprehend. In this regard, Birhanu (2000) states that the weighting of language skills at Addis Ababa University is mainly focused on reading comprehension even though it varies from year to year. Reading comprehension questions, as he asserts, account for around 30% of the other skill components (i.e. listening,

speaking, writing, grammar, and vocabulary). As a result, many scholars believe that reading is highly one of the most important skills for tertiary level learners, especially when a second or foreign language is used as a medium of instruction in academic settings, because almost all subjects require reading academic resources (Carrell and Eisterhold, 1988; Grabe & Stoller (2019) McDonough, 1984). Reading comprehension has also an impact on the growth of other language skills. With regard to this, Burns and Richards (2012) claim that EFL/ESL students struggle with speaking and writing since they do not have enough reading comprehension to provide them with pertinent information. Accordingly, reading is cross-sectional in nature and aids in the development of other language skills (Anderson, 2012).

According to the proposed document for a 12-year New Ethiopian Education Road Map, university graduates must have a balance of cognitive and non-cognitive skills, as well as higher-order thinking skills like critical, creative, and problem-solving thinking, as well as a high level of digital literacy (Tirusew et al., 2018). Thus, to cope with the reform's objective and the educational expectations of students' academic courses, they need a high degree of English language ability, particularly in reading comprehension. Grabe & Stoller (2019) and Wong (2011) confirm that reading comprehension is an essential ability that all students must master in order to succeed both academically and personally.

As a result, students' general command of the English language, as well as their reading skills, is vital to their academic success at university. According to Levine et al. (2000:1), "The capacity to read academic literature is regarded as one of the most significant abilities that university students of English as a Second Language (ESL) and English as a Foreign Language (EFL) need to learn." This means that students in higher education must have strong reading comprehension skills, which are critical to their academic achievement during their time at university. In accordance to this, Girma (2020) asserts that proficient reading is necessary to succeed in higher education. As for Graham & Bellert (2005) and MoE (2020), reading comprehension is one of the most important skills for all educational learning in order to fulfill the needs of the global economy. Without it, academic and professional achievement is restricted.

For students to reach their maximum academic potential, they must acquire reading comprehension abilities in addition to other language skills. All students require it as a

fundamental ability for both their academic and personal success (Lerner, 2003; Graham & Bellert, 2005). As Wong (2011) points out, reading comprehension is an essential learning skill for all students, especially at the university level when English is the medium of instruction. Therefore, students must be efficient at reading comprehension to surpass their academic achievement and personal accomplishment (Rahel, et al., 2018; Dubale, 1999).

However, it is true that it will be impossible to achieve academic and personal success if the student's reading comprehension skills are poor. Regarding this, Sona (2018) points out that Ethiopian students' academic performance, activities related to their jobs, and other aspects of daily life are all impacted by reading difficulties. Consequently, successful education is linked to the capacity to read and understand swiftly and effectively. Reading in EFL /ESL is considered a vital skill for students' academic achievement since it allows them to study a language independently (Carrell, 1991; Yang, 2012). Students' reading comprehension skills allow them to comprehend and expound on themes while always absorbing knowledge from lectures and books. As teachers, we frequently observe students at all levels, from elementary to tertiary, who can read paragraphs in texts but cannot fully comprehend them (Freese, 1997).

Literatures on reading comprehension have shown that various factors contribute to students' difficulty comprehending written texts effectively. For example, educational elements such as teaching methodologies and instructional duration, as well as non-educational factors like home environment and prior knowledge, influence students' reading comprehension abilities (Roomy & Alhawsawi, 2019). However, innovative instructional approaches leveraging technology have emerged to address these challenges, particularly concerning teaching methods for reading comprehension. Among these technology-driven methods is blended learning (Karkour, 2014).

According to Bolandifar (2017), blended learning (BL), combining traditional classroom instruction with computer-led learning, emerges as a potential solution. It is also known as hybrid learning, which is a contemporary approach in higher education that combines traditional face-to-face instruction with online learning. This method, widely regarded as a key competency of the 21st century, integrates the benefits of in-person interactions with the flexibility of online learning (Owston & York, 2018). It can enhance the critical thinking and problem-solving skills of students while accommodating diverse learning styles by actively participating in discussions,

collaborating with peers, and accessing materials at their own pace (Oh & Park, 2009; Owston & York, 2018).

1.2. Statement of the Problem

When teachers are asked about their students' reading comprehension proficiency, they say that students are unable to read analytically, distinguish between important and unimportant ideas, and adapt their reading to the various types of materials they are presented with, and thus do not find reading enjoyable (Graham and Bellert, 2005; Hall and Barnes, 2017). Atkins et al. (1996) note that many students in high school and higher education institutions struggle with reading, which manifest as poor English comprehension and reading difficulties. In addition, Afflerbach et al. (2015) state that certain university students may need more skills to interact with academic materials effectively or might experience difficulties with reading, which could impede their educational progress.

Moreover, many local research studies have common assertions regarding university students' poor reading comprehension. Among these local researchers, Mendida (1988), Gebremedhin (1993), Asalefew (2015), Solomon (2000), Hailemichael (1994), and others carried out their research studies on reading with college and university students and confirmed students' deficiency in English in general and reading comprehension in particular. Alamirew (1992) also claims that the students who succeeded in joining universities do not seem to be significantly better than those who completed but did not join. Besides, Gessesse (1999) indicates that many of the students who arrive at universities have low language competency, may be due to their inadequate linguistic background from primary and secondary schools. Similarly, in my experience, reading is not cherished, and university students in Ethiopia have difficulty in reading and interpreting a text with comprehension.

What can be understood from the above explanations is that the quality of English language learning and teaching in general reading comprehension in particular is reported to be worsening daily. Since the 1980s, students' ability to continue their studies in English decreased (Tekeste, 2006). One issue could be that students do not have enough opportunities to read, communicate, and assist one another. They are only allowed to do what their teachers instruct them to do.

Besides, factors of a heterogeneous character that differ from place to place and circumstance to circumstance exist and provide challenges (Abiy, 2005; Abebe, 2012). As Gessesse (1999) pointed out, the active participation of the reader is overlooked, and the teacher is the one who generates meaning for the students, whether through translation or paraphrasing.

Moreover, Dubale (1999) and Seid (2012) find out that the main approach for teaching reading in Ethiopia is the traditional approach, which is not likely to be effective for EFL learners; the teacher-centered method tends to turn students into passive consumers of information. In line with this, Birhanu (1999) and Abiy (2005) also state that a high school teaching method, which impacts how students learn in universities is not learner-centered; most teachers employ the already defunct conventional methodology. In addition, as to Haregewoin (2007), poor quality teaching materials and ineffective teaching methods utilized by English language teachers appear to have exacerbated the problems. In this respect, Hailom (1993) also adds that all English teachers complain of shortages of teaching materials, large class sizes, and poorly motivated students as major factors in their inability to teach effectively. Since proficient readers perform well in school and subsequently in university, educators are becoming increasingly concerned with teaching reading (Dima, 2018).

Accordingly, something needs to be done to modernize and improve the English language teaching and learning in the Ethiopian education system in general and in higher education in particular. Thus, the invaluable question that should be asked would be, "How can university students increase their reading efforts to cope with their studies?"

Due to these facts, educators constantly search for better and more cutting-edge approaches or methods for their learners to use in teaching-learning (Bonk and Graham, 2012). Thus, the introduction of computers and the internet has changed how learners communicate and share information (Kessler et al., 2012; Warschauer & Grimes, 2007). One of the most recent notions to be included in this process is blended learning, which combines conventional instruction with computer-led instruction and has become one of the most prominent 21st-century skills in higher education settings (Bolandifar, 2017). In addition, Thorne (2003) asserts that blended learning is the most sensible and natural development of our educational program. It offers a refined answer to the problems of adjusting education and growth to meet the demands of each individual. It is a

chance to combine the interactive and participatory elements of the most successful traditional learning methods with the creative and technological advancements of online learning. Thorne (ibid) also said that blended learning is a very real move in the right direction and offers educational institutions an authentic opportunity to advance their working practices, the environment, or the freedom of students to be who they are.

According to the researcher's observation and literatures in the field, computers and e-learning settings have become increasingly popular in the twenty-first century. However, compared to face-to-face learning environments, online learning settings do not offer as many advantages (Viz and Kaur, 2017). Consequently, combining both online and classroom-based instruction, a blended learning (BL) approach is suggested to overcome these drawbacks while maximizing the advantages of both traditional and digital learning environments (Graham, 2006; Kitchenham, 2011). In other words, BL can be a remedy for surmounting educational obstacles, including managing diversity and providing access to resources (Bonk and Graham, 2012), which are all apparent inadequacies in institutions of higher education. Karkour (2014) asserts that students' reading skills are greatly enhanced by blended learning, which provides them with a variety of online and printed reading materials. He stresses that the state of the world now shows how technology can be used for much more than just exchanging resources. As a result, by providing a range of resources for daily reading assignments, blended learning offers students more chances than just face-to-face instruction.

Therefore, research on BL-based reading comprehension has been undertaken with high school and university students by international researchers like Behjat et al. (2012), Ghazizadeh and Fatemipour (2017), Alnoori and Obaid (2017), Kim (2014), Bataineh and Mayyas (2017), and others. Their finding revealed that the experimental group receiving a combination of traditional classroom learning and e-learning displayed a statistically significant improvement in their reading comprehension. To the best of the researcher's knowledge, however, few research studies have been done because BL seems to be a novel concept in our environment. Even though they have no direct relevance to this research, the researcher thought that it seems advisable to mention these research studies to show that BL is a subject that can be researched in our context. Thus, some local research works are presented as follows.

Kassahun Melesse (2014) wrote the first article on e-learning in Ethiopia. To the best of the researcher's knowledge, he was the first to introduce e-learning to Ethiopian higher education institutions (HEIs). His research sought to determine how e-learning affected the academic achievement of mathematics students. His finding demonstrated that the impact of traditional information and communication technologies on students' achievement was insignificant.

Awoke (2019) also conducted his dissertation under the title "Learning Algebra through Blended Approach." He used a mixed research methodology to perform research on learning algebra using a blended approach in a university setting. His finding revealed that students tend to grow in their success and understanding as a result of the blended learning method.

BL articles are also on the rise in connection with English writing skills. Mulu and Menna (2016), for example, conducted research at Hawassa University employing BL as their experimental intervention to promote students' English writing skills at the undergraduate level. Their findings revealed significant positive effects on students' writing skills, which were also superior to those of the control group, who received traditional face-to-face instruction.

Numerous local studies have been done about reading. However, since BL is a recent phenomenon, none of them investigated the impacts of BL on students' reading comprehension. It is apparent that BL is nowadays gaining more attention on a global level, and Ethiopia is no exception. As a result, to the best knowledge of the researcher, there has never been a local study in the Ethiopian context on the effects of blended learning on university students' reading comprehension and their attitudes toward it. Therefore, this research endeavors to fill in this gap.

Besides, the inspiration for this research stems from one of the well-acknowledged national issues: the current trend of technology in the teaching-learning process is not on track to meet its objectives (Eshetu et al., 2009). The loss in student reading performance, the need for innovative pedagogical approaches to improve English language education in general, and reading comprehension in particular, as well as the current trend towards technology, all point to the need to act. Digital native students expect their HEIs to be just as technologically advanced as the rest of the world. They also favor proficient teachers in the digital realm (Motschnig-Pitrik and Standl, 2012). Accordingly, it is critical to connect cutting-edge thinking to how English is

taught and learned since it is a dominant language in the world. As a result, a study on the effects of BL on university students' reading comprehension and their attitudes toward it could be worthwhile. Thus, the current study aims to address the following research questions:

1. Does the experimental group's reading comprehension score on the posttest show a statistically significant improvement?
2. Does the control group's reading comprehension score on the posttest show a statistically significant improvement?
3. Are there statistically significant differences between the experimental and control groups in their overall reading scores on the posttest?
4. What are the students' attitudes toward reading instruction using a blended learning approach following the intervention?

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of the study was to investigate the effects of blended learning on university students' reading comprehension of first-year students at Addis Ababa University's College of Business and Economics.

1.3.2. Specific Objectives

Besides to the above general objective, the specific objectives of this study were to:

1. Determine whether the experimental group shows statistically significant improvement in reading comprehension skills between the pretest and posttest.
2. Assess whether the control group shows statistically significant improvement in reading comprehension skills between the pretest and posttest.
3. Investigate if there are any statistically significant differences between the two groups' overall posttest reading scores.
4. Assess the attitudes of students in the experimental group toward reading instruction using a blended learning approach after the intervention.

1.4. Research Hypotheses of the Study

The following two-tailed, non-directional hypotheses were generated in order to test and verify whether BL affects the reading comprehension of freshman university students.

Ho: There is no statistically significant difference in reading comprehension scores between students who receive instruction through blended learning (BL) and those who receive instruction through conventional face to face methods. (Null Hypothesis)

H1: There is a statistically significant difference in reading comprehension scores between students who receive instruction through blended learning (BL) and those who receive instruction through conventional face to face methods. (Alternative Hypothesis)

1.5. Scope of the Study

The main focus of this study was confined on the effects of BL on freshman university students' reading comprehension at Addis Ababa University's College of Business and Economics. It focused on reading comprehension components such as finding the main idea, finding factual information, finding the meaning of vocabulary in the context, making inferences, and identifying references. Therefore, it may not be generalizable to other language skills such as listening, speaking, writing, vocabulary, and grammar, or to institutions other than AAU.

In addition, although various technology platforms such as Facebook, Twitter, email, rumble, social bookmarking, and other methods of improving students' reading performance can be used to enhance reading comprehension, the current study did not use all of these and other platforms of improving students' reading comprehension. The researcher, on the other hand, used the university's existed Learning Management System (LMS) Moodle as a major platform for the experimental group.

1.6. Significance of the Study

According to the existing literature in the field, this research appears to be a novel study in the field of English language teaching in Ethiopia, which underscores its significance. For this reason, the study may be of a valuable significance for English language teachers stand to benefit

significantly from the findings of this study. It emphasizes the significance of creating effective learning environments through employing blended learning approaches to improve students' reading comprehension skills. By incorporating this approach, educators can tailor their teaching practices to better suit the diverse needs and learning styles of their students. In addition, the study underscores the role of English language teachers in leveraging multimedia resources to aid in improving students' reading comprehension abilities. Encouraging the use of various multimedia tools can enhance engagement and comprehension among students, thereby enriching the learning experience.

Supervisors and language experts may consider the study's findings useful in providing teacher training programs. Supervisors can encourage teachers' ongoing professional development by helping them become proficient in using BL approaches for English language instruction. Additionally, English language syllabus designers may get insights from this research to refine and enrich the existing curricula. Incorporating diverse instructional methods and activities aligned with BL principles can enhance the effectiveness of English language education, ensuring its relevance in addressing the evolving needs of learners.

Moreover, this research may serve as a resource for researchers interested in further exploring the issue. It may provide a foundation upon which future studies can build, offering a springboard for advancing knowledge and understanding in this area. In a nutshell, the significance of this research may extend to both theoretical and practical benefits, contributing to the ongoing discourse and improvement of English language learning and teaching practices.

1.7. Limitations of the study

This study has some limitations. Firstly, the participants were entirely first-year students enrolled in the social sciences program. As mentioned in section 1.5, the focus of the study was solely on investigating the effects of blended learning on the reading comprehension of students at Addis Ababa University's College of Business and Economics. Therefore, the findings were not intended to be generalized to other first-year students in different programs, departments, or institutions. Thus, it could be suggested to include larger sample sizes and extend intervention

time in different disciplines and higher education institutions to increase the generalizability, breadth, or applicability of the results to similar contexts.

Secondly, the current study used 35 pre- and post-test questions related to the given reading comprehension components (factual information, main idea, vocabulary, inferences, and references) to examine students' reading comprehension. Increasing the number of questions and using more critical rubrics like paraphrasing and summarizing in both the pre- and posttests, on the other hand, can improve the study's applicability. Thirdly, it had a narrow focus on reading comprehension, and it did not include other language skills such as listening, speaking, writing, grammar, and vocabulary. This may limit the broader applicability of the findings to overall language proficiency.

1.8. Operational Definitions of Key Terms

Reading comprehension: refers to the ability to read a text, process it and understand its general idea, try to infer meanings beyond the text, and understand the idea of the text in depth.

Face-to-face learning refers to the traditional way of teaching, which takes place inside a classroom and depends on the teacher lecturing or discussing topics with the students.

Online-learning: refers to the learning unit delivered through virtual classroom, and it is mainly studied by the students independently.

Blended learning is an educational approach that integrates traditional face-to-face classroom instruction with online learning activities and resources. It combines traditional learning and online learning.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter is divided into four broader sections; the first section presents concepts related to reading and reading comprehension, its purposes, and theoretical models. The second section also presents the nature and meanings of blended learning, its benefits and challenges. It is followed by sections dealing with blended learning in higher education institutions, its impact on students' reading comprehension skills, international studies on blended learning and reading comprehension, and blended learning and students' attitudes. Finally, the theoretical and conceptual frameworks of the study are discussed.

2.2. The Concept of Reading and Reading Comprehension

Reading, according to Sheng (2000), is the exchange of ideas between the writer and the reader to interpret written or printed symbols. It entails understanding and identifying words, phrases, clauses, and letters. Hengari (2007) says that the reading process is connected to comprehension, appreciation, and application. Therefore, the process of deriving meaning from texts is reading comprehension. The goal is to get a general comprehension of the material given in the text (Woolley, 2011). Students' academic progress may be restricted if they lack reading comprehension abilities and reading enthusiasm (Alvermann & Earle, 2003). Thus, comprehension of reading is an intricate process where readers can comprehend essential information as well as anticipate, figure out, argue, and comprehend the writer's perspectives.

In addition, reading comprehension is a multifaceted skill. Mikulecky and Jeffry (2007) claim about reading comprehension is that a reader should be capable of identifying the main theme, locating specific information, drawing conclusions, and having adequate vocabulary when reading to have a better level of comprehension. In a similar vein, Harmer (2001) affirms that the five goals of reading comprehension are to recognize the subject, anticipate and estimate specific information, identify specific information, and gain general knowledge.

Furthermore, identifying the major ideas of a text is a crucial component of reading comprehension (Hare and Milligan, 1984). Additionally, readers will benefit from being able to identify the important idea since it will aid in both retention and comprehension of the content

later. Though each line in the paragraph often offers facts leading to a common notion, no single sentence explicitly states the core point.

According to King and Stanley (2009), a collection of claims frequently contains repetitions of certain phrases in different sentences. Textual content occasionally contains information that is either overly generic or overly specific. According to their needs or reading goals, readers must therefore designate the information included in the text. Readers are further helped in comprehending the text by discovering this specific information that enhances reading comprehension (Mikulecky & Jeffry, 1996). It is evident that understanding involves more than just reading the text. To make meaning of the materials they read, readers must actively solve issues, make decisions, and draw conclusion based on prior knowledge. Consequently, the ability of a reader to recognize main themes, supporting details, inferences, references, and word meaning has a significant impact on their overall comprehension of the text they are reading.

Therefore, as to Vaz (2012), reading is a crucial language skill that has historically played a big role in language learning and teaching. This ability gives learners the chance to access ideas transmitted by people in many places and eras, which allows them to widen their perspectives and deepen their understanding of the world. Reading in a foreign or second language is crucial for learners' personal and cognitive growth, as well as for enhancing their chances of succeeding in education and finding employment in a globalized world (Wong, 2011).

In language learning, it plays a significant role. It determines how well students do in their academic work and in developing themselves personally. The language skills of the students have also improved. If reading is used properly, it can facilitate the growth of other language abilities (Nuttall, 1996). Most significantly, reading ability plays a huge influence on a learner's educational career in a situation where a second or foreign language is used as the primary instructional medium at the higher education level, as is the case in Ethiopia. Wallace (1992) and Nuttal (1982) also deal that reading might refer to the capacity to comprehend or analyze a text. Students will advance more quickly and develop more fully across all subject areas with improved reading skills since it is one of the most efficient ways to increase language proficiency. In addition, Grabe and Stoller (2002) confirm that reading is one of the most typical

approach for students to pick up new information, Students must, therefore, be able to comprehend what they read and apply it to their own lives.

Reading comprehension, on the other hand, refers to the capacity for absorbing data, processing it, and developing a coherent, precise knowledge of the input. As to Girma (2020:11), "comprehending a text is an interactive process between the reader's background knowledge and the text". Utilizing interactive techniques to create a deeper understanding of the content is a hallmark of well-developed comprehension skills (Lin, 2010). It happens when the reader takes various details from the text, incorporates them, and then applies them to what they already know (Koda, 2005). Accordingly, comprehension can be defined as the ability to process information, analyze it, and arrive to a coherent and accurate understanding of the input. Therefore, effective reading comprehension requires the reader to be actively engaged with the text.

Reading definitions frequently incorporate the concept of comprehension or understanding, which is in accordance with the aforementioned interpretations. Lipka & Siegel (2012), Russell (2013), and McLean (2014), stress that comprehension is the primary aim of reading. It is worthless to read without understanding. Grabe (2009:14) defines "reading is centrally a comprehending process." It means that readers read to figure out what the writer is trying to say. Ahmadi et al. (2013:238) also state to reading comprehension as "the ability of readers to understand the surface and the hidden meanings of the text using meta-cognitive reading strategies." Therefore, reading comprehension is "the process of unlocking meaning from connected text" (Zoghi et al., 2010, p. 439); it, according to Woolley (2011), is the process of constructing meaning from a text.

In summary, the explanation provided above could help one to see that reading is cognitive activity requiring higher-order thinking and understanding abilities. It is not just a matter of skimming a text. In particular, reading comprehension describes one's capacity to comprehend, interpret, and evaluate written materials. It requires a number of complex cognitive processes, such as word decoding, creating links between concepts, and inferring meaning from texts. Thus building good reading and reading comprehension abilities is crucial for university students because it is the cornerstone for lifelong learning and a successful future.

2.3. The Purposes of Reading Comprehension

It is widely believed that English is the language of almost the entire world. It is crucial for students' academic success as well and is increasingly expected in higher education (Najeeb, 2013). To enhance this, reading comprehension is a core skill for education, reading is associated with academic achievement (Dabarera et al., 2014; Snowling & Hulme, 2011). Due to this, many people, especially ESL/EFL students, now find it necessary to read fluently in English, and in order to access published material, people must read in English (Attarzadeh, 2011; Lo et al., 2013).

Reading comprehension is also essential to learning a language since it influences how other language abilities develop (e.g., speaking, writing, vocabulary, etc.). It is clear that this is the case when ESL/EFL students have trouble writing because they lack relevant information based on enough reading (Burns and Richards, 2012). Given that it has also an impact on every aspect of academic learning, reading comprehension is cross-sectional in nature (Gayo et al., 2014). For instance, reading comprehension can help students expand their vocabulary and develop their spoken and written language abilities (Patesan et al., 2014). As a result, at various educational levels, reading comprehension should be stressed. It is worth mentioning that English reading comprehension is becoming more and more crucial to building a successful society (Najeeb, 2013). Besides, reading comprehension is actually essential to becoming a successful person for both academic and professional success (Vorstius et al., 2013).

Hogan et al. (2011) make a similar case, stating that good reading comprehension is crucial for contemporary life: effectiveness in education, efficiency in society, and nearly all sorts of work. It is because a skill that plays a crucial role in education and beyond. The purposes of reading comprehension extend far beyond simply understanding the words on a page; it requires the ability to critically analyze, synthesize information, and draw meaningful conclusions. As a higher education student, honing this skill is essential for success as it enables us to navigate vast amounts of complex information, draw connections between ideas, and engage in higher-order thinking (Grabe, 2009). This suggests that poor comprehension can result in academic failure (Lipka and Siegel, 2012) and could have an adverse impact on the lives of ESL/EFL students when trying to obtain employment or a better career (Ahmadi et al., 2013). In other words,

reading problems will undoubtedly result in educational problems, which are a significant cause of social and economic deprivation.

In conclusion, students need to develop reading comprehension skills that go much beyond simply understanding words on a page. It helps students develop higher-order cognitive skills, critically assess information, and infer meaning from written texts. Besides, enhancing our comprehension abilities allows us to go after knowledge and self-improvement long after our academic careers are done.

2.4. Theoretical Models of Reading Comprehension

The literature uses the phrase reading comprehension to refer to working with the text to understand its meaning. Several discussions related to reading comprehension consider the importance of reading materials, the role of the teachers, and methods of teaching as the most significant factors leading to effective reading comprehension (Ghazizadeh & Fatemipour, 2017). As a starting point, it is important to know some theoretical models for understanding the reading comprehension process. Woolley (2011) mentions the three views of reading comprehension processes that are bottom up, top down, and interactive views.

2.4.1. Bottom-up Model

The bottom-up concept, as Hudson (2007) points out, was first articulated by Gough in 1972. According to this model, the information stored in memory has little impact on how the processing is carried out. This process, as to Alderson (2000:17), is flawed because it assumes that "…readers are passive decoders of sequential graphic-phonemic-syntactic-semantic systems." This means that the reader is solely reliant on the context for interpretation, and that because it is text-driven, no prior knowledge is required. In simple terms, this technique confines the reading process to recognizing and decoding letters, disregarding the significance of the reader's existing knowledge in understanding the text. Consequently, students may become disinterested in reading because the process becomes monotonous. Johnson (2008) argues that the bottom-up approach is incomplete as it neglects the reader's contribution to the text.

Despite the main drawback of the bottom-up approach being its failure to acknowledge the importance of prior knowledge, it is worth noting that the method can be valuable in the pre- and while-reading stages of a reading class, especially for beginners and lower-level readers, such as many Ethiopian students.

2.4.2. Top-down Model

This approach to the reading process, as Hudson (2007) and Davies (1995) point out was presented by Goodman in 1967. Unlike the bottom-up approach, which ignores the students' past knowledge and expectations, the top-down approach emphasizes the value of the students' former knowledge and expectations in assisting them in making sense of a reading material (Alderson, 2000).

Forecasting, summarizing, and anticipating from texts are among the reading comprehension skills that the top-down approach promotes (Ahmadi et al., 2013). It implies that Readers utilize prior knowledge to the reading text to construct coherent meaning, allowing them to forecast the author's argument and then incorporate this framework process to interpret difficult sections of the text. In this approach, the reader's expectations are vital. Readers bring their own personal exposures and perspectives to them, and these factors have a significant impact on how they understand a reading text.

2.4.3. Interactive Model

As for Davies (1995), this model was introduced by Rumelhart in the 1980s. Many experts, such as Ahmadi et al. (2013), contend that neither of the two ways (top-down and bottom-up) is sufficient for effective reading. According to Harmer (2002), bottom-up and top-down processing should interact; that is, bottom-up processing enables readers to concentrate words and phrases and obtain understanding by connecting these detailed elements together to form a whole, whereas top-down processing allows the reader to get a broad view of the reading text by accumulating the comprehensive image, allowing the reader to have appropriate expectations.

As a result, the interactive approach, which is a proper blend of these two approaches, has developed. This method creates a balance between both the bottom-up and top-down processes; it is like blended learning that plays a mediator role between face-to face and e-learning. To put

it another way, an interactive process necessitates the utilization of prior experience, expectations, and context. Simultaneously, it encompasses the concepts of speedy and accurate feature identification for letters, words, and lexical forms, as well as the concept of automatic processing. According to Ahmadi et al. (2013:239), the interactive reading approach states to a reader who "takes into account the critical contributions of both lower-level processing skill (word recognition) and higher-level comprehension and reasoning skills (text interpretation)".

Anderson (2012) argues that reading activities should be the major emphasis of instruction for students developing their reading skills. This will help instructors give successful reading instruction. To provide successful reading instruction, instructors should prioritize the development of reading as the primary skill and then incorporate other necessary skills and knowledge in to it, as it is illustrated in the figure below.

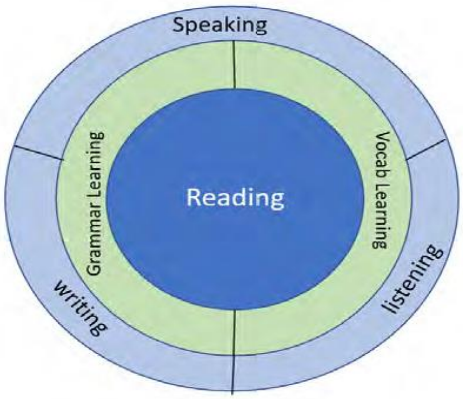


Figure 1: Places of Reading at the Center of Language Learning Instruction (Anderson, 2012)

In the figure above, Anderson (ibid) presents the notion that reading comprehension should be the main focus of language learning instruction. However, the idea that reading skills are more important than other language skills must be seen as a cultural shift where students interact with texts that have greater meaning and come to understand the importance of reading for the growth of vocabulary, grammar, speaking, listening, and writing skills. This kind of change can happen progressively when the emphasis moves from being teacher-centered to being student-centered.

2.5. The Nature and Meanings of Blended Learning (BL)

2.5.1. The Nature of Blended Learning

The idea of BL first came about in the late twentieth century, and the concept "Blended Learning" was introduced in the early 21st century (Martyn, 2003). Contrary to popular belief, the notion BL is not a recent development and has been in use for more than 20 years. It first appeared in the corporate environment as a method for allowing workers to work and study simultaneously (Sharma, 2010). In this matter, Sharma & Barrett (2007) state that the phrase "Blended Learning" was initially used in the context of corporate training in the business sphere. It was then used in higher education, and at last, in the instruction of English. Accordingly, it has appeared in the academic setting as a result of the following factors: the availability of digital technology in and outside of the classroom; the development of the pedagogical opportunities of information and communication technology for teaching and learning; and the discontentment generated in web-based learning with the stand-alone implementation of digital courses (Hong and Samimy, 2010; McDonald, 2008).

Even though, e-learning has gained a lot of support since its launch in the 1990s, it began to lose credibility for a number of reasons. Pardede (2012) considers the following as some of the most notable justifications:

(1) Students often feel alone and quit the course early;

(2) Dealing with computer screens all the time deters students from learning;

(3) Tools for communication are available, but it remains up to the individual student to utilize them;

(4) Teachers get overburdened and overwhelmed with developing online curricula and providing individual attention online;

(5) Students are deprived of opportunities to gain knowledge from "real" experiences like laboratory experiments, guided activities, and interacting socially with classmates; and

(6) Different students have different information infrastructures, which could lead to unfairness. These criticisms of online education prompted scholars and educators to develop a novel idea known as "blended learning." This new idea was primarily created by supplementing e-learning with crucial components rather than completely replacing it.

Due to the drawbacks of entirely virtual environments, such as feelings of loneliness and poor motivation, many people began to reject the "either-or approach of learning online vs. face-to-face" and turned to the establishment of blended spaces in order to achieve more fruitful results (McDonald, 2008, p.3). A variety of media must be used effectively for learning and teaching, as noted by Laurillard (2002:3), as "the information and communications technology (ICT) part is unlikely to contribute to more than 50% of the whole plan."

Therefore, fully online classes and learning courses have been rebuked for a lack of socializing and the support features of conventional teaching styles and techniques (Güzer and Caner, 2014). Due to this disparity, a BL technique was developed, which blends online and offline instruction. Thus, as to Singh and Reed (2001:1), BL emerges as a way to "optimize the learning outcome and cost of program delivery" by combining 'the best' aspects of both environments.

2.5.2. Meanings of Blended Learning

In research journals and conferences for higher education, the notion of "blended learning" has become more prevalent (Graham, 2006). The words "blend" and "learning," according to many researchers, are where the idea of blended learning originated. Blending is referred to as combining items, and learning is referred to as assimilating new information (Olivier, 2011). The phrase "blended learning" was originally used in the first book about the concept, which defined it as "a combination of instruction from two educational types historically separated: traditional face-to-face education and e-learning education" (Graham, 2006:5).

In addition, there are numerous authors who have discussed the idea of blended learning, and it has extensive range of definitions. Blended learning, according to Neumeier (2005), is the integration of face-to-face and computer-assisted learning in a unified teaching and learning environment. Additionally, Sharma & Barrett (2007) describe BL as a course that blends a face-to-face classroom constituent with an acceptable use of technology: Many contemporary technologies, like the Web, CD-ROMs, and interactive whiteboards, are included under the umbrella word "technology". It also involves the use of computers for communication, including programs like chat and e-mail, in addition to a variety of platforms that let teachers enhance their courses, like Moodle, wikis, blogs, and virtual learning environments (VLEs).

Blended learning, on the other hand, is defined as a variety of traditional face-to-face classroom teaching with more digital computer activities (Kim et al., 2008; Sharma & Barrett, 2007). Besides, Al-Hadidi (2013) describes it as an integrated system aimed at aiding the learner at every step of her/his learning; and it is performed by merging classical learning and electronic learning, in all of its forms, inside classrooms.

According to Vaughan & Randy (2013), one method to visualize blended learning is to imagine a continuum of technological use in education, as shown in Figure two below. The traditional classroom is on one end of the spectrum. This classroom features desks facing the front and a teacher who gives a lecture and then engages students in class debates, small group work, or solo study. This classroom has very little, if any, technology in it. A completely online learning program is on the other extreme of the spectrum. Students learn totally off-site (for example, at home), and they interact digitally with the curriculum and their teacher-of-record in this environment. Blended learning, as its name implies, therefore, is a combination of methods from both sides of the continuum into a single integrated learning approach.

Figure 2: The Continuum of Technology Usage in Education (Beaver et al., 2014:3)

In a nutshell, in the academic literature, two definitions of blended learning are most commonly mentioned. For instance, According to Graham (2006), blended learning blends traditional and virtual learning environments. The careful blending of traditional classroom instruction with online learning opportunities is another definition of blended learning provided by Garrison & Kanuka (2004). Consequently, online and traditional instructions have become recognized as essential components of blended learning. In other words, one crucial element can unite all the above definitions: the incorporation of various teaching strategies. Combining conventional classroom learning with online learning, two historical paradigms of instruction, results in a

combination of instructional approaches. Therefore, this study uses the above definitions of blended learning, which is a combination of conventional face-to-face learning and virtual learning.

2.5.3. Rationale for Blended Learning

As to Kenney & Newcombe (2011) and Gordon (2014), the key advantage of blended learning lies in its ability to enhance flexibility and accessibility for students. With the incorporation of online technologies, students can access course materials and lectures at their convenience, allowing them to study at their own pace and manage their time more effectively. In other words, in contrast to traditional teaching methods, it surpasses boundaries of time and location and can directly improve students' learning results (Melton et al., 2009). Additionally, blended learning provides a platform for students to engage in interactive and collaborative learning experiences through various online tools, such as discussion forums and group assignments. This fosters a more personalized and engaging learning environment, promoting student-centered learning and improving overall comprehension and retention of course content (Susan & Chris, 2015).

Blended learning, which combines online learning with conventional in-person instruction, has great sense in today's educational system. According to Graham (2016), it is promoted as a successful strategy for reducing educational inequality. As he states, there are three ways that people believe technology can promote equality and inclusivity in education: 1) increasing the variety of educational mechanisms and modes; 2) democratizing education by lowering educational barriers; and 3) enhancing individual control over one's own education in terms of content, delivery method, and learning pace. Despite significant investments in content creation and technology for education, like open educational resources and platforms, these promises still need to be fulfilled.

Another rationale for blended learning is its potential to promote student engagement and active learning because traditional classroom settings sometimes fail to address the diverse learning needs and preferences of students (Weaver et al., 2008). Moreover, blended learning allows for the integration of multimedia elements, such as videos, simulations, and interactive discussions, which can cater to various learning styles and promote deeper understanding. By combining face

to face instruction with online resources, students can actively participate in the learning process and retrieve a wide range of materials to reinforce their knowledge (Sharma & Barrett, 2007).

Furthermore, as to Bleimann (2004), blended learning also facilitates immediate feedback and assessment, enabling students to gauge their understanding and make necessary adjustments to their learning strategies. This continuous cycle of learning and feedback help students develop critical thinking skills and cultivate independent learning habits, essential for their academic and professional success (Owston & York, 2018). Some of the fundamental blended learning components are explained below.

2. 5. 3. 1. Autonomy

The ability to make autonomous or self-directed students is one justification for switching to a blended learning strategy. The terms autonomous learning and self-directed learning are interchangeable in this research. Instead of being inactive consumers of information, blended learning enables students to actively participate in the creation and application of knowledge. It is important to define autonomy and self-directed learning in this context. The former is described by Little (1991:15) as having "the capacity for detachment, critical reflection, decision-making, and independent action". Another definition was given by Sriarunrasmee et al. (2015) as a "process where the learner considers and chooses the learning topic based on his or her own interests and abilities" (p. 156).

Two crucial issues need to be taken into account when using blended learning in situations where the instructor is largely physically absent: First, the resources and tasks must be designed clearly and with a reason; secondly, the instructor's role is vital in motivating and assisting students in making informed learning decisions (Sriarunrasmee et al., ibid). According to Terry & Reinders (2008), it is difficult for students to demonstrate autonomy without the intervention and direction of instructors. It has long been believed that those students who are capable of making additional endeavors to improve their learning abilities will only benefit from the positive effects of learning on their own.

Bhat et al. (2007) also backed up this idea that when schools choose to use a self-directed learning (SDL) strategy, they must take student diversity and individual skill levels into account.

They performed a study in a freshman medical study in India to assess the exam results of two sets of learners using a t-test. The first group received SDL instruction as a feature of their learning strategy, while the second group received regular instruction. The findings showed that not everyone could profit from independent learning and that only highly motivated students with strong abilities to learn could become successful self-directed learners.

2. 5. 3. 2. Flexibility

The justification for blended learning's widespread adoption by students is a major focus of much of the recent study on the subject. To explain why students favor blended learning, Graham & Dziuban (2008) claim that it gives students more freedom due to a certain amount of the learning is carried out at scheduled face-to-face times while other learning happens online at students' leisure. The ability to select the time and location that work best for each student is regarded as an essential component. This is unquestionably the case for adult learners who must juggle their education with work and family obligations. This assertion is clearly illustrated by students who reside away from their institution or who must attend to other obligations. Blended learning's accessibility and flexibility have made higher education more accessible to more students, regardless of their cultural background or geographic position.

The use of e-learning and blended learning for learning a language has been studied extensively in the past. Gordon (2014) examined how technology-augmented learning can promote flexible approaches and gives learners better options for where they learn, how quickly they learn, and how they learn. On a university campus, in the office, or at home, each of these things can be helped by the use of the proper strategies and contemporary technology related to computers. Although technology can make it possible to use a wide variety of methods in the presentation and evaluation of courses, Gordon (ibid) note that the incorporation of technology in an individual's everyday life is not something new in the contemporary era.

2. 5. 3. 3. Engagement

Recently, researchers have become more interested in discussing how blended learning can improve student involvement. Student engagement, as described by Furlong & Christenson (2008:365), is “a concept that requires psychological connections within the academic environment (e.g., positive relationships between adults and students, and among peers), in

addition to active student behavior (e.g., attendance, effort, pro-social behavior)". This definition emphasizes how important student contact is. Weaver et al. (2008) claim that tertiary education is concerned with creating fruitful interactions between students and teachers as well as between students and their classmates providing credibility to this viewpoint. It entails promoting both learning cooperation and teamwork to advance creative, engaging, and high-quality e-learning settings.

Utilizing contemporary technology for educational purposes can promote the idea of collaboration and learning from each other. Employing a web-based survey methodology, Ates-Cobanoglu et al. (2017) investigated blended coaching practice in the study of English and found that pre-service ICT instructors viewed their English mentors as coworkers (group mates) who encouraged, assisted, and directed them in their endeavors while also serving as a resource as subject-matter experts. The blended mentorship practice was well-received by both mentors and mentees, and each of the study participants suggested that teacher education programs should implement this strategy.

2. 5. 3. 4. Learning Outcomes

When creating blended learning classes, achievements in learning are a crucial factor to take into account (Mugenyi et al., 2017), but this must be done while balancing factors like student workload, evaluation, and methods of instruction and learning (Bralic & Divjak, 2018). Assessment is the main issue of these elements, as suitable evaluation tools should be chosen to give students the greatest possibility of reaching the desired outcomes (Hamad, 2017).

Alshehri (2017) carried out an important empirical investigation into the connection between the method of blended learning and student results. The extent of commitment and happiness among 100 Saudi students enrolled in a blended program for higher education was examined by the researcher. He discovered by using a combination of qualitative and quantitative approaches to data gathering and analysis that students who participated in a blended education program showed greater academic achievement with respect to their grade point average results along with a greater degree of engagement. Similar findings were made by Zacharis (2015), who discovered that enrollment in courses with blended instruction was favorably related to student success and accomplishments.

However, with regard to Alshehri's (2017) empirical results, not every learner was pleased with the virtual courses, which had a negative impact on their readiness to continue with blended learning and follow its rules. These results might be partially attributed to the instructor's educational strategy, the internet connection's speed, and the students' individual views and opinions of blended learning (Vasileva-Stojanovska et al., 2015).

According to Ellis et al. (2016), blended learning is valuable because it uses a broader variety of approaches and platforms than conventional learning, substantially helps in the improvement of students' skills, and has the potential to arouse positive feelings. From this perspective, it seems pertinent to say that, when compared to traditional learning method; blended learning is more successful at igniting the aforementioned aspects of students' personalities.

In contrast, Suda et al. (2014) found no appreciable variation in exam results and assessment scores among students who had finished conventional courses and courses that were blended. These results might show that while the use of blended learning may assist students achieve their course objectives, its success, and values are highly dependent on the environment in which it is used. As it was already stated, modern life offers a wide range of chances for English practice that were not previously accessible in formal learning settings (Trinder, 2017).

In general, Marsh (2012: 4-5) lists nine strengths of blended language learning: (1) provides a more individualized learning experience; (2) provides more personalized learning support; (3) supports and encourages independent and collaborative learning; (4) increases student engagement in learning; (5) accommodates a variety of learning styles; (6) provides a place to practice the target language beyond the classroom; (7) provides a less stressful practice environment for the target language; 8) provides flexible study, anytime or anywhere, to meet learners' needs; (9) helps students develop valuable and necessary twenty-first century learning skills.

2.6. Benefits and Challenges of Blended Learning

2.6.1. Benefits of Blended Learning

According to Bleimann (2004), there are several benefits to conventional learning, also known as face-to-face learning, including the availability for teachers to provide students with rapid

feedback in the classroom and direct communication between students and instructors. E-learning, on the other hand, offers students access to a wide variety of educational resources, including websites, audio, video, animations, and electronic exercises. However, a student in a face-to-face learning environment is required to attend all courses; she or he may be inactive and may miss the opportunity to grasp the academic tasks and the necessary course material. Consequently, it would seem that a mixed learning approach would be a better course of action for maximizing the advantages of the two methods of instruction (Garnham & Kaleta, 2002).

As Huang et al. (2009) mention, one of the primary purposes of BL is its flexibility in terms of the resources it makes available to students. Through it, they have access to a variety of resources at multiple times and locations, not just the ones their teachers have cited or even the textbooks. Second, it promotes diversity in learning by enabling teachers to create a range of lesson plans that correspond to the different academic abilities of their students. Thirdly, it improves the quality of the e-learning experience because it teaches students how to use information technology, including how to find information online, download and upload files, bookmark essential websites, and engage in virtual interactions with other students.

In line with this, Oh & Park (2009), Davis & Fill (2007), Tayebinik & Puteh (2012) assert that blended instruction gives teachers the chance to spend more time with students in both small groups and individually, as well as to build a flexible and active environment for learning that has the opportunity to alter students' experiences and outcomes. Besides, including improved pedagogy, easy information access, more student interaction, personal presence, cost efficiency, and simplicity of learning material updating are some further benefits of using BL. In this regard, Erdem (2014: 200) claims "Blended learning enables learners and teachers a possible environment to study and teach more successfully." It provides learners with a different learning opportunity and aids in their rise to greater levels of accomplishment, autonomy, personal development, and responsibility. As to Garnham & Kaleta (2002), the purpose of merging tools is to combine "the greatest qualities" of in-person and online learning. Technology integration into the educational system, therefore, strives to facilitate and hasten the educational purpose.

As stated by Kazu & Demirkol (2014) as well as Kenney & Newcombe (2011), BL gives students the chance to meet more demanding standards than are usually required. It enables

students to learn in far more flexible ways and to pursue academic goals with greater depth and variety. The most notable advantages of blended learning, according to Susan & Chris (2015), are that it is more efficient in the utilization of classroom time; learners become more active, creative, and planned; it is more interesting for students, and it offers the possibility of providing numerous instructional resources for students.

In addition, according to Cheung et al. (2010), blended learning is preferable to full e-learning in order to optimize the advantages of both conventional and virtual learning. In addition, Cai & Yao (2010) support blended learning as a way to get over e-learning's drawbacks. According to Ruberg et al. (1996), blended learning also has the advantage of enhancing pedagogy and emphasizing student-focused approaches, enabling students to actively engage in their studies, facilitating social and collaborative knowledge construction, and providing greater flexibility and cost effectiveness. Furthermore, Ngan (2011) asserts that blended learning has a big impact on the current instructional approach because it enables students to take in information from a variety of media and perspectives, addressing the unique needs of each individual student in the process.

Generally, the aforementioned explanations express that blended learning represents a modern approach to education that caters to the diverse needs of students. Its flexible nature and integration of technology allow for personalized learning experiences and promote independent thinking. The combination of face-to-face and online interactions creates an engaging and interactive learning environment, fostering collaboration and critical thinking skills. Therefore, BL, which is vital in the 21st century, promotes a student-centered approach to education, preparing students for success in an increasingly digital and globalized world.

2.6.2. Challenges of Implementing Blended Learning

As was previously said (section 2.6.1), blended learning (BL) mixes online learning with traditional learning, but when we adopt each separately, there are limitations. Sikora & Carroll (2002) note that, in contrast to traditional classroom settings, students in higher education are generally more dissatisfied with totally online e-learning modes. According to Cai & Yao (2010), the most common challenges with e-learning were learners' feelings of isolation, lack of motivation, and mistrust regarding its intended outcomes. Moreover, instructor-led instruction, in

which students are passive consumers of knowledge, is a significant drawback of conventional classroom teaching (Dabbagh & Bannan-Ritland, 2005).

Furthermore, when designing and creating efficient e-Learning programs, it is important to take into consideration the fundamental tasks of instructors, such as the delivery of instructional material, practice, and assessment (Shurygin &Sabirova, 2017). In order to adopt BL settings, the institution must build on its culture and assets, in addition to its curricular, methodological, and technological opportunities. Additionally, it must formulate proper environments for faculty so they can build or restructure courses and provide them in ways that make the most of both traditional and online learning settings (Galvis, 2018).

Besides, before the implementation of BL in academic institutions, major issues including how to facilitate interaction, flexibility, students' learning processes, and building an effective learning environment should be resolved (Boelens et al., 2017). Other difficulties that must be solved include a weak internet connection, a dearth of required tools and technology, a lack of desire for self-regulated learning, a low level of interaction with facilitators and learners, and a dearth of appropriate assessment techniques (Al-Amin et al., 2021). Besides, the two primary ongoing obstacles are thought to be time management and self-discipline in finishing the online component. As a result, teachers must use email notifications, planned activity pacing, and set deadlines to assist students in staying on task (Shand & Farrelly, 2018).

The attitudes of instructors towards BL are also crucial. Because of the extra workload and time commitment, shortage of pedagogical and technical abilities to implement BL, and difficulty obtaining the appropriate balance between conventional and web-based learning, some instructors regard it as an additional burden (Ma'arop & Embi, 2016). They refuse BL since they lack the appropriate skills and knowledge needed to establish the proper blend of learning and teaching (Krasnova & Shurygin, 2019). If instructors are not motivated to rethink and adapt courses that give students more and more varied learning opportunities than those delivered either digitally or in the classroom alone, BL will not fulfill its promise of greater learning (Jeffrey et al., 2014). Lack of money, time, and qualified instructors are additional obstacles to effectively implementing BL lessons; however, the availability of internet material and technological advancements may be able to overcome these obstacles (Khalil et al., 2018).

Therefore, higher education institutions (HEIs) should think about prolonging and expanding their implementation and development plans prior to implementing and choosing a BL model that is suitable for the institution. In order to improve the attitudes and behaviors of the learning and teaching staff, institutions should also ensure that they have the required technology and infrastructure. In addition, comprehensive tutorials and technical support for both students and instructors should be provided. In general, Poon (2013) provides the following basic overview of the benefits and challenges of blended learning.

Table 1: Summary of the Benefits and Challenges of Blended Learning

Benefits	Challenges
• improved learning results for students	• Unrealistic students expectation
• great flexibility for students and teachers	• Students perceived-isolation
• Improved autonomy ,reflection and research skills	• Technological problems for students and teachers
• Reduced students withdrawal rate	• Invasiveness into other areas of life
• Ability to foster a professional learning environment	• Time commitment
• Potential cost resource saving	• Technological problems for institutions
• Promotes students engagement and active learning	• Lack of support for course redesign
	• Difficulty in acquiring new teaching and learning skills

2.7. Models of Blended Learning

Since there is no such thing as ‘a one-size-fits-all’ solution in the teaching-learning process, blended learning instruction could be a prime example of this. Due to this, different blended learning models have been created over the course of the field’s history. Acree et al. (2017), Beaver et al. (2014), and Horn and Staker (2014), identify four models that are frequently employed. These models are expressed below.

2.7.1. Rotation Model

According to this model, learners in a program rotate between varieties of modes, including online learning. There are four main sub-models, including lab rotation, individual rotation, flipped classroom**,** and station rotation. A few of these sub-models are more suitable for primary and secondary education; for instance, station rotation calls for learners to move throughout the classroom according to the instructor's discretion. Others are effective on a university campus; for instance, the lab rotation model calls for course participants to switch between various campus locations, at least one of which must be a web-based learning lab. A learner follows a personalized timetable as they rotate through several learning modalities in the individual rotation model. The treatment group in this research will, therefore, get training utilizing the lab rotation approach.

2.7.1.1. Station Rotation

In this sub model, learners move around the classroom between several stations, at least one of which has a web - based learning component. Other stations incorporate more conventional instructional learning strategies, including whole-class talks, worksheets, and small-group activities. On some form of schedule, either predetermined or according to the teacher's discretion, students move through each station.

2.7.1.2. Lab Rotation

This sub-model is comparable to the one before, but the virtual learning portion occurs in a learning lab that is specifically created for this use. The learning lab and the classroom are alternated by the students while they remain on the school grounds.

2.7.1.3. Flipped Classroom

Students in a flipped classroom alternate on a predetermined schedule between classroom education at school and web - based instruction after school. Thus, students have complete choice over the manner, timing, and location of their online training. The following day, they return to the classroom to apply what they have learnt in a project-based setting.

2.7.1.4. Individual Rotation

Students can choose how they rotate between the modalities in this rotation model. Individual student rotation timetables can be set by the instructor or a computer, but once established, these schedules often do not change. Students do not always rotate to every accessible station, in contrast to other rotation models. For instance, high-need learners might be sent to an intense online reading program on a set rotation while small-group instruction is not always required for all students.

2.7.2. Flex Model

The flex model, like the individual rotation model, has learners working on a personalized schedule that alternates between modalities, one of which is e-learning. The flex model, in contrast to individual rotation, is flexible rather than fixed, enabling real-time alterations to timetables to accommodate the constantly changing demands of students for learning. Despite the fact that the teacher-of-record is there and directly involved with the learners, this support is adaptable and flexible to meet the needs of each individual student. The combination of breakout rooms, study space, learning laboratories, small group work spaces, and social spaces is just one example of the innovative classroom and school arrangements made possible by this blended learning approach.

2.7.3. A La Carte Model

The a la carte model, sometimes referred to as the "self-blend" concept, let students create their own learning environment by picking particular online courses to complement their regular in-classwork. Learning can take place on-site at the school or off-site for the virtual coursework component. The teacher-of-record is a virtual one. When a school does not have a particular Advanced Placement course, language course, or fresh methods for teaching basic courses that are tailored to a student's needs available on-site, this strategy may be used. Institutions may decide to build labs or lounges to facilitate the web - based learning part if the curriculum is completed entirely online while on the campus of the institution.

2.7.4. Enriched-Virtual Model

In this strategy, students spend a majority of their time learning online while spending a portion of their time in an off-campus setting. In contrast to the self-blend model's course-by-course approach, it is a "whole school experience," which implies it adopts a complete approach to education. The instructors-of-record are mostly online, though teachers or teaching assistants also offer supplementary assistance in a traditional classroom setting.

Therefore, whatever the approach, blended learning aims to expand each student's access to information by giving some freedom in when and where it is accessible, personalize each learner's learning experience, and keep costs down while providing cutting-edge educational experiences (Horne & Staker, 2015). Practically speaking, "blended learning is the engine that can fuel individualized and competency-based learning" (ibid, p. 10).

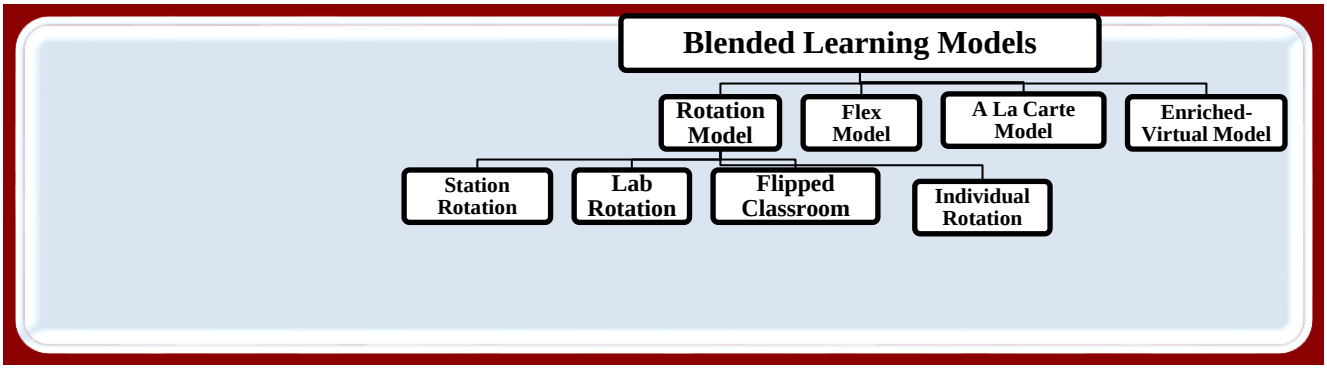


Figure 3: Models of Blended Learning (Staker & Horn, 2015)

2.8. Blended Learning in Higher Education Institutions (HEIs)

Blended learning, also known as hybrid learning, is an innovative approach in higher education that combines traditional face-to-face instruction with online learning. Bolandifar (2017) asserts that blended learning is currently the most widely used 21st-century competency in higher education that blends conventional instruction with online learning or technology-enhanced instruction. This method enables higher education students to have the best of both worlds, as it incorporates the benefits of in-person interactions with the flexibility of online studies (Owston & York, 2018). Moreover, it offers a wide range of advantages, such as increased engagement, personalized learning experiences, and improved convenience. Students in higher education, as

to Oh & Park (2009) can benefit from blended learning by actively participating in class discussions, collaborating with peers, and accessing educational materials at their own pace. This approach promotes critical thinking and problem-solving skills while accommodating different learning styles and preferences (Owston & York, 2018).

Furthermore, blended learning in higher education allows students to develop essential digital literacy skills as they navigate digital platforms and engage with online resources. By utilizing various online tools and resources, such as virtual simulations, interactive quizzes, and multimedia content, educators can enhance the learning experience and cater to individual student needs (Driscoll, 2002). Additionally, Gordon (2014) mentions that the flexibility of blended learning enables students to manage their time effectively, as they can access course materials and lectures at any time and from anywhere. This is particularly valuable for students who have other commitments, such as part-time jobs or family responsibilities. In other words, blended learning offers a comprehensive and adaptable approach in higher education, empowering students to become independent and engaged learners.

The use of technology in teaching and learning, both inside and outside of the classroom, is highly desired by this generation of students (De George-Walker & Keeffe, 2010). These students exhibit abilities, attitudes, convictions, and sensitivities impacted by technology (Oblinger, 2003). They use a broad definition of technology that goes beyond computers and the internet to encompass things like the capacity to modify technology to suit particular requirements (Roberts, 2004). In addition, they urge academic personnel to experiment with new delivery methods. Due to this, numerous institutions have adopted blended learning as one of their methods for teaching and learning (Dziuban et al., 2005). Therefore, to meet the requirements of the new digital native of students joining higher education institutions (HEIs) are working to offer efficient, adaptable, practical, and accessible learning experiences. In this regard, Garrison & Kanuka (2004) confirm that BL can be a relatively safe and successful approach to addressing the challenge of the fundamental shifts that technology advancements bring to higher education.

The use of a blended learning method has several benefits for higher education academic staff as well, including universal connection, the ability to create communities of research, and cutting-

edge teaching techniques. However, the implementation of blended learning may be hampered by negative attitudes held by academic professionals (Oh & Park, 2009; Fresen, 2010). These perspectives have to do with how people feel about innovation and change, how long it takes to implement changes, how much effort is involved, how much institutional support there is the infrastructure that is available for technology, how lessons are delivered, and quality control.

In summary, blended learning in higher education is anticipated to foster social communication within the HEIs community, enhance learners' competence and confidence, offer a high-quality learning environment, promote the development of critical thinking, and incorporate technology as an effective tool for content delivery.

2.9. The Impact of Blended Learning on Students' Reading Comprehension Skills

Blended learning, which combines traditional in-person instruction with online educational tools, has revolutionized the way reading comprehension is taught and learned. This innovative approach has had a significant impact on the intelligence and comprehension of students in higher education (Masduqi, 2016). With its interactive and personalized nature, blended learning provides a more engaging and effective learning experience, ultimately leading to improved reading comprehension skills (Alnoori & Obaid, 2017).

Access to a wide range of digital resources is one of the major consequences of blended learning with respect to reading comprehension. According to Kheirzadeh & Birgani (2018) and Huang et al. (2006), students in higher education can now explore a wide range of online resources, including e-books, websites, and virtual libraries, that are customized to their individual reading levels and interests. With the availability of materials, reading can be practiced in different forms, making it a more individualized learning process. Hence their reading of many styles, genres and views helps in their reading comprehension skills.

Moreover, Stefan (2016) stresses that a participatory and collaborative learning environment is fostered through blended learning. According to Hewitt (2003) and Sutton (2001), BL promotes a greater degree of engagement among students, between students and instructors, between students and content, and between students and the course interface. Consequently, students can interact with their instructors and classmates more deeply through group projects, video

conferences, and online discussion boards (Driscoll, 2002). This exchange of ideas, opinions and views give students a better understanding of what is being read. Collaborative exercises allow students to clarify their thoughts and make arguments for their positions, which help a lot with their reading comprehension skills.

At tertiary education level, the impact of blended learning on reading comprehension cannot be understated. It helps students become more proficient readers by giving them access to a variety of digital resources, regular practice, and an environment that encourages collaboration (Kheirzadeh & Birgani, 2018). Blended learning-based reading comprehension can promote university students to improve their analytical thinking starting in their very first lesson, increase their ability to retain information and interact with the subject at a deeper level, thereby improving their general intelligence and, subsequently, their probability of success in their studies and later in life.

In addition, rapid and radical changes in new technologies had a significant impact on all elements of language utilization. As for Szymaska & Kaczmare (2011) and Verezub & Wang (2008), hypertext and hypermedia can be used for the purpose of studying foreign languages thanks to digital technology. While hypertext can often be difficult to understand, it can be made easier by employing good reading techniques. Since one of the primary objectives of many language learners is to read what sometimes referred to as authentic materials, one benefit of reading hypertexts online is that readers can access authentic content. In their study, Verezub & Wang (ibid) illustrate how online hypertexts can make learners grasp the texts more in depth.

Rahimi & Rezael (2011) also did longitudinal research on physical and digital reading comprehension and came to the conclusion that when students are exposed to digital texts that have connections to other websites with additional reading content, their reading is promoted to a greater extent. In order for learners to become successful readers in a foreign language, according to Szymaska & Kaczmare (2011), there must be access to online texts that allow for authentic responses to what they have read. Nevertheless, they discovered that, for text retention and interpretation, using a blended text (both printed and virtual) benefited students in a blended course.

Therefore, apart from the diversity of resources, blended learning also gives higher education students plenty of chances to practice and reinforce. Many online resources contain practical exercises and quizzes that allow students to engage with the readings, actively practicing their language skills. These activities not only facilitate the development of critical thinking and analytical skills but also allow for immediate feedback, enabling students to address any misconceptions and reinforce their understanding (Garrison & Kanuka, 2004). Blended learning, with its continuous practice, reinforces the content and boosts the understanding and retention of the concepts.

Based on the above reasons, blended learning could affect reading comprehension skills, and students are able to use blended learning and increase their reading skills. It allows students to learn far more flexibly, and this in-turn promotes greater depth and richness in their studies. Hence, it can be observed that blended learning applied to English language learning and teaching, especially in reading comprehension performance would be noteworthy.

2.10. International Studies on Blended Learning and Reading Comprehension

Blended learning, which combines traditional face-to-face instruction with online activities, has gained significant attention in recent years. This innovative approach has been particularly successful in the field of reading comprehension. Studies have shown that blended learning can enhance the intelligence and comprehension skills of students in higher education. Kheirzadeh & Birgani (2018), for instance, conducted a study in an attempt to reveal the effectiveness of a blended learning platform in improving the reading comprehension performance of Iranian EFL students. In this study, 60 EFL participants were chosen from Islamic Azad University. They were categorized into two intact groups: an experimental group and a control group. The implementation of the treatments came after the administration of reading pretests. The experimental group received reading passages from the Selected Readings book. The control group received regular instruction. After post-testing both groups, the findings showed that blended learning had a positive effect on reading comprehension.

Kim (2014) investigated the effects of mobile technology use on reading comprehension abilities in blended learning. A total of 44 participants were divided into two groups: a control group (n = 21) and an experimental group (n = 23). Each week, members of the experimental

group were requested to discuss reading-related issues on their mobile devices outside of class; members of the control group were instructed not to do so. When comparing the means of the pre-and post-tests, the findings showed that the experimental group's reading comprehension skills had developed considerably more than those of the control group.

In addition, Ghazizadeh & Fatemipour (2017) investigate how blended learning affects EFL students' reading ability. Sixty intermediate-level Iranian EFL students were divided into the control and treatment groups at random. A quasi-experimental design was employed in which the experimental group underwent a combination of blended learning and traditional classroom training, while the control group received conventional classroom instruction. According to the findings, reading proficiency improved in the experimental group that received a combination of regular classroom instruction and integrated learning in a statistically significant way.

Alnoori & Obaid (2017) examined a blended strategy for teaching reading comprehension to high school learners. The study involved fifty secondary school students in Al-Rusafa, Iraq, who were learning English as a second language. Their reading assessments showed a remarkable improvement in areas such as vocabulary, pronunciation, and meaning comprehension, indicating a beneficial outcome of the integrated learning strategy.

A study conducted by Behjat et al. (2012) at the Jordan University of Science and Technology in Jordan explored how Moodle-enhanced education affected the grammar and reading comprehension of learners studying English as a foreign language. A quasi-experimental pre- and post-test design was employed together with Moodle to enhance in-class instruction. Skimming, scanning, expanding vocabulary, and focusing on particular information were among the reading comprehension techniques that were emphasized. Results showed that the experimental group had improved in both specific reading abilities and overall reading comprehension achievement, with differences in posttest-adjusted mean scores in both the treatment and comparison groups.

Yudhana (2021) examined how blended learning might be used to improve Thai undergraduate students' English reading abilities. Sixty Naresuan University, Thai students were randomly chosen as the participants, who were split into experimental and control groups. The primary

means of gathering data were each group's post-tests, and any discrepancies in post-test scores were examined using a t-test. The findings of the study imply that EFL undergraduate students could see a significant improvement in their English language reading proficiency if blended learning is implemented.

Therefore, blended learning is an innovative approach that has the potential to enhance learners' educational experiences. Besides, the above research findings on blended learning have demonstrated that incorporating blended learning into reading instruction can enhance the quality of teaching and learning on reading comprehension. However, the context, research design, sample size, and sampling techniques of this study distinguish the current study from the above stated international studies. In this study, for example, participants were treated in their pre-existing intact groups using a quasi-experimental research design. Ghazizadeh & Fatemipour (2017) used a random sampling technique to divide participants into experimental and control groups even though their design was quasi-experimental. Additionally, a pure experimental design was employed by Yudhana (2021), and participants were assigned into experimental and control groups using randomization.

To sum up, studies have shown that blended learning based reading comprehension programs have a positive impact on the intelligence and comprehension skills of higher education students. The combination of face-to-face instruction and online resources provides students with immediate access to a wide range of materials and promotes critical thinking. Moreover, blended learning allows for regular self-assessment and personalized feedback, aiding students in improving their comprehension abilities (Karkour, 2014). Thus, embracing blended learning in reading comprehension education can be an effective strategy for tertiary students to enhance their intellect and comprehension.

2.11. Blended Learning and Students' Attitudes

According to Hodges & Logan (2012), attitude refers to a person's feelings, beliefs, and reactions to a specific thing, person, event, behavior, or phenomenon. Attitude is not a human trait; it actions that are learned. According to Pratkanis et al. (2010), an individual can also form his/her attitude through social factors wherein the social factors include parents, friends, media, educational institutions, religious organizations, and major reference groups. It may be

developed directly from one's observations of own behavior or experiences. Gardner (1980) further describes that a person's attitude is the way of thinking or behaving towards a person, thing or a situation, it is a complex mental condition, involving emotions, beliefs, and predispositions to act in certain ways. Although unrelated to aptitude, attitude can be positive or negative towards a person, object or event that has an impact on student's capacity to learn.

Several studies have been conducted regarding the effectiveness of BL and students' attitudes towards BL. Research suggests the attitudes of university students toward BL are generally positive. Many students prefer it because of its flexibility in time and the fact that they can learn at their own pace. For instance, Rovai & Jordan (2004) reported that university students had positive attitudes toward blended learning, because they valued the accessibility via the web and the in-person support of instructors when required. Senn (2008) evaluated 51 university students and conducted case studies. The results showed that students preferred hybrid learning over conventional classroom instruction, as they enjoyed the flexibility of the online environment but were eager to gather in person for extra educational support. Additionally, Vance (2012) surveyed 1,874 undergraduate learners and found that they preferred blended learning since it was accessible and included instructor intervention.

Additionally, the effects of computer-assisted education on reading and writing are studied by Asadzadeh et al. (2010). According to the findings of their study, the majority of EFL students had a favorable attitude towards the use of multimedia tools to develop their language skills. They also liked preserving their work and utilizing multimedia to boost their reading abilities.
The above researches on students' attitudes and blended learning, learners in higher education generally hold this approach in high favor. Its flexibility, accessibility, and personalized learning experiences contribute to a positive perception of this method. Given the increasing prevalence of blended learning, educational institutions should consider its incorporation in their pedagogical strategies, designing courses that cater to the diverse needs of students while promoting academic success. Thus, this study assesses students' attitudes and feelings regarding blended learning modes (F2F and online instruction).

2.12. Theoretical Framework of the Study

In recent years, there has been growing interest in blended learning that combines online and face-to-face learning. Similarly, when this practice is applied to the reading instruction, tertiary level students can be benefitted a lot from this method of teaching as it provides a more effective and flexible style for the students. The theoretical framework on blended learning based reading involves the integration of traditional classroom teaching with online tools and resources. This approach aims to promote active and self-directed learning, provide personalized instruction, and support individualized learning paths. Therefore, the combination of social constructivism and connectivism theories, which are presented below, is used as the theoretical basis for the present study.

2.12.1. Social Constructivism Theory

Lev Vygotsky introduced the learning theory of social constructivism back in 1968. The theory states that learning should be meaningful, so there should be collaboration between students working in groups. This is through authored guidance by students through which they can be in interplay over time as instructors through the learning experience. Social constructivism changes the student's role from being a passive listener to becoming an active participant and a co-constructor of information among co-learners. It also transfers responsibility for knowledge acquisition from the instructor to the student (Akpan et al., 2020).

According to Moll (2014), the concepts of social interaction that focus on, "more knowledgeable others," and the "Zone of Proximal Development" are affirmed by Vygotsky's Social Constructivism theory. The zone of proximal development (ZPD) concept demonstrates that people learn by achieving challenging goals under guidance, and the zone is defined as the "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others" (Vygotsky, 1978, p.86). Despite the fact that the idea of the ZPD was developed through child observation that provides a foundation for social learning in adult education (Stacey, 1999).

In accordance with social constructivism, dialogue, social engagement, and the application of information are all important components of learning and ways to accomplish learning goals (Akpan et al., 2020). Therefore, according to social constructivism, knowledge is not a personal possession but rather a shared experience that arises from social interaction.

2.12.2. Connectivism Theory

The theory of connectivism was established and was first articulated by George Siemens in 2005, and it continues to be a major component of modern teaching and learning (Abdullah & Hashim, 2021). It is now regarded as the most modern learning theory designed for use in 21st-century instruction. According to Corbett & Spinello (2020), Siemens found that the current learning theories were inadequate for the digital age because the majority of them were designed without taking technology into account. This led to the development of connectivism theory.

As a result, forward-looking, connectivism theory is needed. Connectivism, in its simplest form, is a theory of knowledge and learning that encourages networking for learning and places a strong emphasis on using technology to foster online connections (Downes, 2019). Through connectivism, as Siemens (2005) asserts, learning is a process of linking specialized nodes or knowledge sources. According to the theory of connectivism, learning is not restricted to any one place but rather is made up of networks of connections that are built via experience and interactions among students, technologies, and their environment (Goldie, 2016).

It also recognizes the influence of technology, society, interpersonal networks, and employment-related activities. Essentially, it is networked social learning (Duke et al., 2013). Constructivism was created at a time when learning was not considerably influenced by the "digital world," whereas it lays more attention on the effects of technology and networks (Heick, 2017).

Connectivism is, therefore, presented as a new educational philosophy for the internet world, extending Vygotsky's idea of the zone of proximal development (ZPD) to encompass learning that occurs via social networks and technical instruments that are external to the student (Van den Berg, 2017). Overall, it appears that Vygotsky's ZPD offers practical advice for tutors on how to actively involve their students through successful exchanges and collaborative work, which may be appropriate in a blended environment.

As it is explained in Section 2.5.2 of this chapter, blended learning is defined as a combination of face-to-face and online learning (Sharma & Barrett, 2007; Graham, 2006; Al-Hadidi, 2013). Its main goal is to combine the best elements of both online and traditional learning platforms. This can be seen by the fact that the theories of social constructivism and connectivism presented here are supported by the characteristics and meaning of BL. In line with this, Alley (2008) states that teachers should adopt the fundamental advantages of social constructivism and connectivism theories to enable the learning environment to combine the best applications of each theory while interacting with learners as active and independent learners in order to encourage student participation in learning language in this new situation.

Generally, by integrating social constructivism and connectivism theories into reading comprehension, teachers can establish dynamic learning environments where students actively participate in cooperative meaning-making processes. This may help to utilize both social constructivism and connectivism theories to improve students' reading comprehension skills. Consequently, it would make sense to integrate the two learning theories to investigate how students' reading comprehension is affected by both in-person and online instruction.

2.13. Conceptual Framework of the Study

The conceptual framework of this study is based on the rationale of the blended learning strategy. As mentioned in Section 2.5.2, blended learning (BL) is a mix of instruction from two historically distinct educational types: traditional face-to-face education and e-learning education (Graham, 2006).

Despite various research findings showing the great potential effect of BL-based reading comprehension on teaching reading skills, such results are unlikely to happen on a significant level unless teachers and students are in agreement and put BL-based reading instructions into practice in reading classes. One phenomenon where an argument could be made for or against is how BL impacts students reading ability that makes them more susceptible to influence from those who have knowledge and experience. Thus, students favor those conditions when experiencing such teaching- learning conditions.

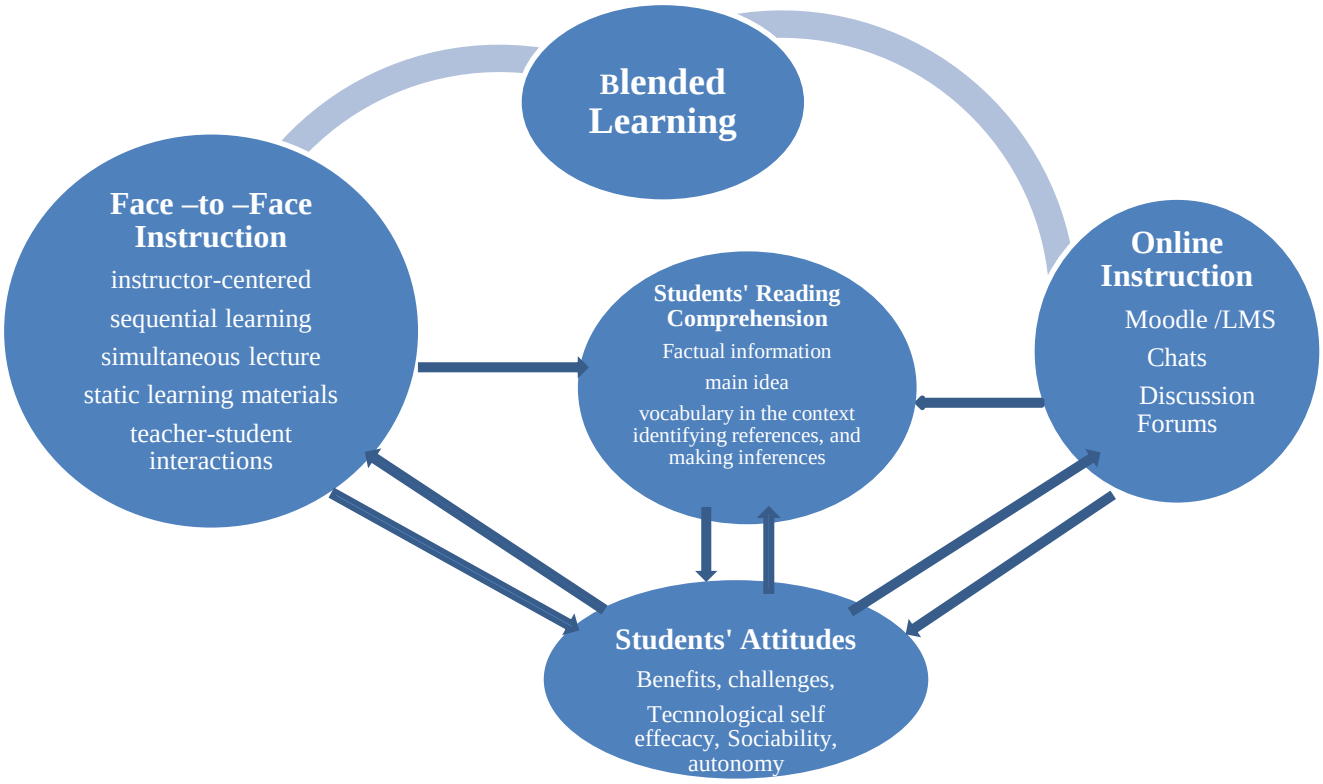
As seen in the conceptual framework below, blended learning (BL) which integrates online resources with traditional classroom instruction has an impact on students' reading comprehension and attitudes. BL facilitates the integration of online and in-person learning. Conventional Face-to-face instruction is appreciated for its sequential delivery of material and direct teacher-student interaction, whereas online training uses content management systems and e- learning environments to offer greater resources and flexibility.

Combining online and in-person instruction can help students become more proficient readers. When students use both approaches, they can benefit from the wide range of resources and opportunities for self-directed learning that come with online learning environments, as well as the personal interaction and prompt feedback that come with in-person education. This comprehensive approach purportedly improves reading comprehension because it meets a wide range of learning needs and styles.

Furthermore, it is known that reading comprehension and BL have a one-way relationship, where the application of such models affects and enhances the reading comprehension skills of the students. This implies that the effectiveness of blended learning implementation will be correlated with improvements in students' reading comprehension outcomes.

This process is influenced by students' attitudes about blended learning. Their opinions on face-to-face and online components impact how they engage with the course materials and, consequently, how well they comprehend the content. How we perceive in-person instruction and online learning environments will likely impact engagement and understanding. On the other hand, the negative attitude might prevent the BL approach from being effective. Besides, the way students feel about the material they read and their understanding of that material are directly related. When students like their teachers, the learning material connects with them and they can gain more from it, and this sometimes results in the rise in reading comprehension. Additionally, increased reading comprehension resulting in positive student perceptions of the instructional methods may also result as positive feedback, increasing the effectiveness of the blended learning technique.

Blended learning, which combines both online and face-to-face approaches, can improve students' reading comprehension significantly. It also highlights how the learning outcomes and involvement of students can greatly depend upon their attitudes toward specific teaching methods. Thus, stressing on the importance of students' attitude is crucial. Being aware of and attending to their attitudes can produce better education outcomes and more effective instructional design. The next figure shows the relationships among blended learning, reading comprehension and students' attitudes with the focus on the implications and connections among these components.



Source: The researcher

Figure 4: Conceptual Framework of the Study

As it is illustrated in the figure above, blended learning incorporates both face-to-face classroom instruction and online learning instruction as key components. One of the most classic methods of teaching is in a classroom setting. This method of imparting knowledge is conventional and fundamental. Teacher-centered, sequential learning, simultaneous lectures, the use of static

learning materials, and interactions between teachers and students are all features of face-to-face traditional classroom instruction. Whereas, online/ virtual learning environments, Moodle/ Learning Management Systems, chats and discussion forums are other names and features for online learning platforms, which are software used in training and education that tracks and records student progress while delivering course materials to students.

To state it differently, the conceptual framework for this study is consists of four interrelated components: students' reading comprehension, attitudes, online, and face-to-face instructions. Students' reading comprehension and their attitudes are the dependent variables among the four components, and the BL methods (face-to-face and online instructions) are the independent variables. There are one-way or two-way interactions between these variables. For example, the above framework shows a one-way relationship where BL (face-to-face and online instructions) influences reading comprehension. This indicates that the students' reading comprehension is anticipated to directly improve with the integration of both face-to-face and online methods.

Regarding the relationship between the students' attitudes and reading comprehension, the figure above posits a two-way relationship between students' attitudes and their reading comprehension. Positive attitudes toward blended learning methods are likely to enhance reading comprehension, while improved reading comprehension might also positively influence students' attitudes toward the learning methods. The effectiveness of these instructions is partly determined by students' attitudes. If students view the BL approach positively, they are more likely to engage with the materials and benefit from it, which in turn can improve their reading comprehension.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

The general objective of the study was to investigate the effects of blended learning on first-year students' reading comprehension at Addis Ababa University's College of Business and Economics', as indicated in Chapter One. This chapter, therefore, mainly encompasses the research design, the research setting and sampling techniques, the research participants and general procedures of the study, data gathering instruments and data analysis methods. It also delineates validity and reliability of instructional materials and research instruments.

3.2. Research Design

The area of the study and the research hypotheses have a significant impact on the choosing of a particular technique among the numerous research designs. "Fitness for purpose" is paramount regardless of the study design chosen (Gorard, 2003, p. 354). Consequently, a quasi-experimental research design was adopted in this study because quasi-experimental study designs do indeed have one major benefit over true experimental designs, specifically that they are researched in natural educational contexts. The reason for this is that, in contrast to pure experimental design, quasi-experimental study design has the significant benefit of being carried out in natural educational settings. This makes using quasi-experimental research design a better way to assess new educational initiatives and programs' effectiveness (Muijs, 2004). Accordingly, the purpose of this research was to take into consideration a quasi-experimental design to examine the effectiveness of educational intervention to enhance English language reading comprehension for university freshman students. Since the participants were already enrolled in classes, randomization is not possible; therefore, a quasi-experimental study design would seem to be more suited.

Therefore, this study selected participants in line with their intact group rather than employing randomization to create artificial study participants. This was done due to the fact that classes were present as whole units, and it would be unethical to disassemble and reorganize them for study purposes as it would cause some sort of disturbance. Since it was the case that assigning the participants would not be fully random, it was decided that the current study employed a quasi-experimental design rather than a pure experimental design. Because it is challenging to

randomly assign participants in academic settings, particularly in classroom experiments, most educational research carried out in academic settings is conducted as quasi-experiments rather than pure experiments (Glatthorn and Randy, 2005). In light of this, a quasi-experimental design with a mixed-method approach was employed to test the hypothesis of the study.

3.3. LMS/Moodle Platform for Blended Learning

MOODLE, which stands for Modular Object-Oriented Dynamic Learning Environment, is a Learning Management System (LMS) for online learning. It is a web-based learning tool that was created using the social constructivist approach, which highlights the various ways in which students can participate in their education (Lin et al., 2017; Shachar & Neumann, 2010; Wu, 2008). In order to develop online courses with an emphasis on interaction and collaborative content creation, computer scientist and educator Dougiamas initially developed this web application in 2002 (Cole & Foster, 2008).

This web-based tool allows instructors, trainers, and educators to provide online support for creating online courses. The basic layout of Moodle's home page, sometimes referred to as the course front page, consists of a calendar displaying the class schedule, a list of assignments, resources, activities, announcements, and updates, along with a link to a list of participants that includes the instructor and students (Dvorak, 2011; Lin et al., 2017).

As a result, the learning materials of this study were stored online, and resources and activities were delivered through LMS/Moodle for the treatment group. With Moodle's support for a variety of resource types, instructors can integrate almost any digital content into their courses so that students can access course materials and upload assessments. According to Lin et al. (ibid), the online learning management system (LMS/Moodle) is mainly used as a means of supplementing face-to-face instruction within the classroom in hybrid or blended learning settings.

Thus, LMS/Moodle was used in this study to plan, implement, and assess the effects of the blended learning strategy on AAU freshman students assigned at the College of Business and Economics in the 2024/2025 academic year. As a result, lessons were created and distributed, feedback was provided, and student participation was tracked by the teacher using a

Moodle/LMS platform. Through the learning platform, students participated in discussion forums and chats to share their opinions.

3.4. Rationales of Selecting the Research Setting and Sampling Techniques

The main reason the researcher focused on higher education settings rather than an elementary or high school was that the researcher believes that the study requires better internet infrastructure, an online learning platform, and computer literacy. University students have had experience with and knowledge of fundamental computer applications. When they were in secondary school, they had been taking computer lessons even though its practicality varies from schools to schools and regions to regions. Besides, the researcher is more familiar with the situation facing universities because he has been teaching English language courses in different universities for more than 13 years.

Therefore, Addis Ababa University (AAU) was chosen for the pilot and main study of this research utilizing a convenience sampling technique for its institutional readiness, internet infrastructure, the availability of the LMS/ Moodle software, and willingness to assist the research implementation across the semester. This technique was used since it makes the research process easy for the researcher to choose subjects based on how accessible they are (Kumar, 2011). The researcher was a student and part-time teacher at the institution, well-acquainted with the setting, faculty members, and management. This familiarity allowed for the timely gathering of relevant information without unnecessary bureaucratic delays. Therefore, Addis Ababa University was chosen because of its better internet infrastructure, the researcher's considerable familiarity, and the availability of online learning platform, LMS/Moodle, which is an existing online learning platform at the university and served a vital function in providing training to the experimental group.

Moreover, the researcher completed his undergraduate and graduate studies, and is currently enrolled in a PhD program at the University, while simultaneously serving as a part-time instructor. Thus, the researcher assumed that using convenience sampling technique to obtain relevant data for the study would not present any major challenges. According to Muijs (2004), convenience sampling is currently the most popular sampling technique used in educational

studies. This happens when researchers can easily access specific locations, such previous coworkers or students from their own institutions, and use those individuals in their research. Therefore, it was believed that this method offers both financial and practical advantages.

3.5. Research Participants and Sampling Procedures

Following the selection of the university, students assigned in the social science stream freshman program at the College of Business and Economics (CBE) were chosen using the purposive sampling technique, and two sections for the pilot study and four sections for the main study were taken into consideration. This is due to the fact that most social science courses are theoretical in nature and necessitate a high level of reading comprehension for students to comprehend and successfully complete their studies. Additionally, to reduce extraneous variables that can arise as a result of college variances, all groups were chosen from the same college.

The participants in both the pilot and main study were first-year students enrolled in Communicative English Skills I (FLEn1011) during the academic years 2023/2024 and 2024/2025, respectively. Since the study employed a two-group pre-posttest quasi-experimental design, intact classes were intentionally selected as research participants using purposive sampling methods. In addition, the intact classes were then taken into the experimental and control groups. Besides, in order to reduce instructor bias and institutional influences, both the comparison and the experimental groups were drawn from the same university and college and taught by the same instructor. In other words, with the help of convenience sampling method, one instructor selected and taught the groups.

All the participants studied English from first grade up to the 12^{th} grade, and they had all passed the English-language Ethiopian Higher Education Entrance Certificate Examination (EHEECE). These factors led to the expectation that participants' English-language proficiency levels before the intervention would be roughly comparable, which the pretest confirmed. Thus, two sections for the pilot study and four sections for the main study of first-year students were purposely chosen to be an intact group.

3.6. General Procedures of the Study

The general objective of the study was to investigate the impacts of blended learning on university students' reading comprehension of first-year students enrolled in a freshman course at Addis Ababa University's College of Business and Economics. The following procedures were used in order to accomplish this objective: The first step was to write letters of cooperation from the graduate program coordinator at the Department of Foreign Languages and Literature at AAU to the chosen college and ICT director to request access for preparing the teaching material using the LMS/Moodle platform. The next step was to look for a volunteer instructor to carry out the intervention. After that, with the assistance of the freshman program coordinator and the registrar from the selected college, a list of sections of first-year students was obtained. After getting access to first-year students, the researcher used the purposive sampling method to choose intact sections (two for the pilot study and four for the main study). They were also briefed about the purpose of the study prior to taking the pretest, and with the assistance of the designated instructor, they were asked whether they would be willing to voluntarily participate or not.

The purpose of the pre-test was to assess the students' current reading comprehension abilities and determine each participant's level of English language reading achievements. The reading comprehension scores of the two groups were compared using statistical analysis based on the pretest results, and the data verified that there were no statistically significant differences between the two groups. Then, the intact sections were assigned into the experimental and comparison groups for the pilot and main study. Besides, both the instructor and participants read the information sheet and signed the consent forms to confirm their willingness to take part in the study after being informed of the general objective of the study (See Appendices 4-8). After that, both the control and experimental groups were given questionnaires to complete before the intervention began in order to ascertain their age and gender. Moreover, the participants in the experimental group were requested to assess their smartphone/ personal computer accessibility, computer familiarity, and internet literacy, along with providing information about their age and gender. Initially, it was considered preferable to conduct the study in computer laboratory rooms, but during the demographic questionnaire phase in both the pilot and main study, it was revealed that all participants in the treatment group possessed smartphones. When asked, "Do you have a

personal computer or smartphone?" they entirely responded with a 'yes,' triggering the decision to carry out the experiment through their personal computer or mobile phones(See Appendices 14 and 29).

After establishing an appropriate schedule, participants in the experimental group underwent training by both the researcher and the course instructor before commencing the actual study, guiding them on how to navigate and operate the software (LMS/ Moodle) within the BL environment. In addition, the course instructor chosen for the main study completed online training for 60 hours from Nile Online at the Norwich Institute for Language Education (See Appendix 16). However, a concise overview of the instructor's responsibilities was given. An opportunity was provided for both the instructor and students to ask questions regarding the study or any mentioned activities. The emails of the experimental group participants were gathered with the assistance of the designated instructors during both the pilot and main study in order to generate a user name and password for them. The AAU ICT director assisted members of the treatment group in generating a username and password, granting them access to the Moodle online resources and activities.

Additionally, during the pilot and main study, the researcher provided training to the assigned instructors on the use of BL and an LMS /Moodle platform. Since the researcher has a 64-hour certification in "Learning Management Systems (Moodle) and Designing, Developing, and Delivering e-Learning Courses from AAU" he trained the assigned course instructors himself using the "AAU e-Learning Guide Manual for Teachers" (See Appendix 11). Moreover, with the assistance of the chosen instructors, participants in the experimental group also got training about the use of the LMS/Moodle using the "AAU e-Learning Guide Manual for Students." In short, the AAU e-learning training manual for teachers and Students (2023) was used by the researcher during the training with the permission obtained from the "Center for Higher Education Research and Training" directorate office at AAU (See Appendices 23 and 24).

However, the researcher did not take part in the study; instead, the experimental and control groups were taught by the designated course instructors during both the pilot and main study. This means that factors associated with the instructor would have less of an effect if every participant gets treatment in the same manner. It is because, to prevent experimenter bias (the

influence of the experimenter on the experiment) from occurring, both groups were taught by the same instructor (Muijs, 2004).

As it demonstrates in figure 4 below, both the control and experimental groups took a pre-test to determine whether they had comparable reading comprehension achievement or not. After the intervention, a posttest was given to both groups to determine how blended learning based reading comprehension as opposed to face-to-face reading would impact on students' reading achievements. Additionally, participants in the treatment group were required to respond to a questionnaire to understand more about their views on blended learning-based reading comprehension. Besides, the selected participants of the experimental group lastly took part in a focus group discussions (FGDs) to examine their attitudes on blended learning -based reading comprehension. In other words, the quantitative data garnered through pre- posttests and questionnaire from the experimental group were triangulated and supplemented with qualitative information from the FGDs and open-ended questions. Generally, the study procedure for the experiment is summarized in the following figure.

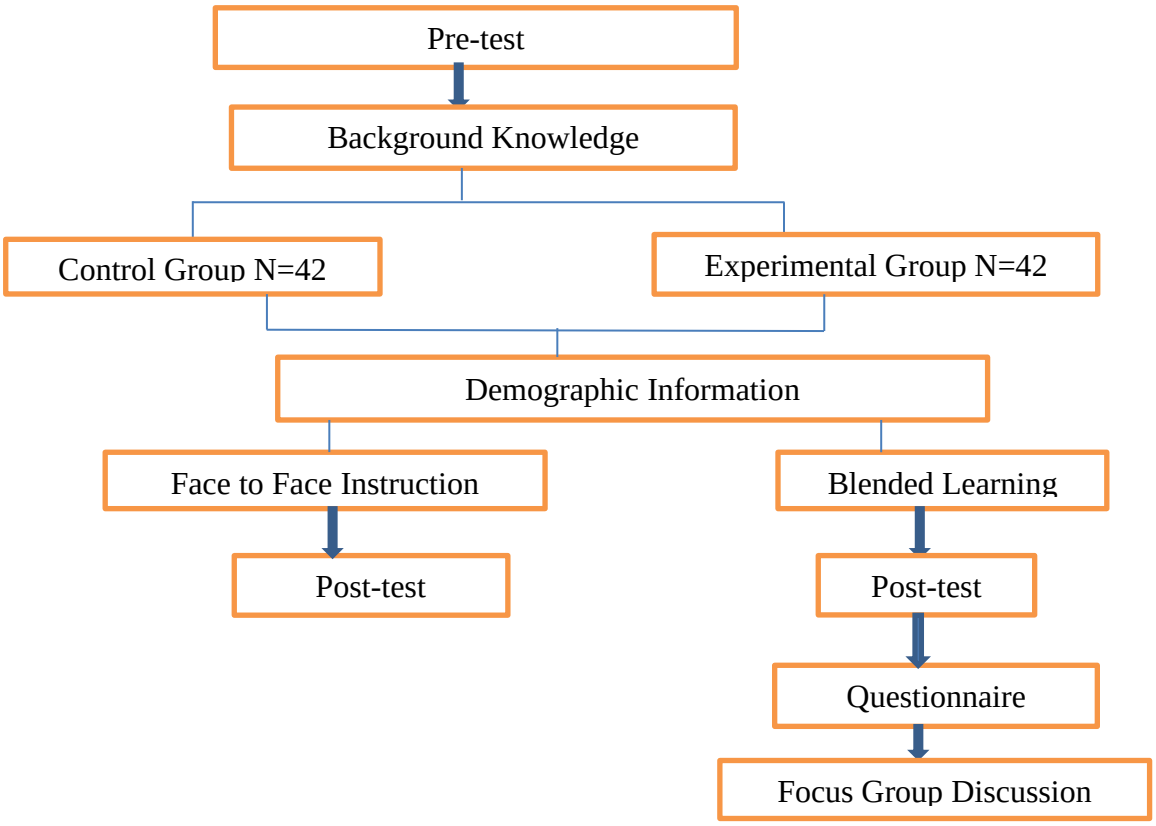


Figure 5: Study Procedure of the Experiment

3.6.1. Preparing and Administering Data Collection Instruments

To achieve the general and specific objectives of this study, data through pre-posttests, questionnaires, and focus group discussions (FGDs) were gathered from first-year students at Addis Ababa University. The purpose, design, and administration of the data collection instruments are presented in the following sub-sections in detail.

3.6.1.1. Reading Comprehension Tests

In this study, it was decided to use the TOEFL reading comprehension exam since the TOEFL (Test of English as a Foreign Language) is a standardized test that assesses university applicants' English language skills who primarily speak other languages (ETS, 2019). Besides, the authorized agent from the Educational Testing Service (ETS) has given permission to adapt the tests for research purposes (See Appendix 10). Accordingly, three English reading texts with questions that were adapted from the TOEFL (2023) served as the pre- and post-test for the treatment and control groups.

In a nutshell, the TOEFL tests were taken because they are standardized assessments that are accepted all over the world, and the TOEFL examination is without a doubt one of the most well-known English-language assessment in the world. More than 10,000 universities and other organizations in more than 150 nations, including Australia, Canada, New Zealand, the United States, the United Kingdom, and all of Europe and Asia, accept TOEFL scores (Educational Testing Service, 2019). Therefore, it would be sound to take the TOEFL tests for academic research purposes.

Five main reading comprehension variables were used to classify the pre-posttest reading comprehension scores of the participants. King and Stanley (2004) assert that there are five components to reading comprehension skills. They are finding main idea, finding factual information, finding the meaning of vocabulary in the context, making inferences and identifying references. Therefore, both the pre-and post-tests of reading comprehension scores were evaluated using these rubrics.

i. Pre-Test

The main purpose of administering the pre-test was to see the level of the study participants' reading comprehension and to check whether there were no significant differences between the experimental and control group before conducting the actual experiment. As it is indicated in section 3.6.1.1, the test was adapted from the TOEFL Test. After that, the pretest was administered for the selected sections in the pilot study at the same time and on the same date. Similar procedure was done for the main study. Finally, the collected test papers were marked and recorded base on the given answer key. The independent samples t-test was then computed using the SPSS version 26 program to see if there was a statistically significant distinction in the groups' reading comprehension scores on the pretest. Subsequently, the intact sections were assigned to the comparison and experimental groups.

ii. Post-Test

Following assigning the intact sections into the treatment and control groups, the treatment groups got instruction utilizing a blended learning strategy, while the control group was given face-to-face instruction as usual. Following treatment, the post-test was administered to both the experimental and control groups using the same procedures as the pre-test. This was to see that BL results in a noticeable change in the treatment groups compared to the comparison groups after the treatment.

As it is described in section 3.6.1.1, for the pre-posttests, there were three reading passages with 35 multiple-choice questions taken from the TOEFL (2023). As Heaton (1990) and Brown (2004) explain, multiple-choice tests are one of the most crucial forms for evaluating reading comprehension. Additionally, multiple-choice tests are particularly effective for evaluating a student's comprehension of reading, listening, grammar, and phoneme discrimination because they can reveal important details about the skills and knowledge that particular students possess. As a result, the adapted pre-post reading comprehension tests were constructed as multiple-choice questions due to their wide application and adaptability to all forms of subject matter used exclusively in high-stakes exams.

In addition, a close look was given to the passages to ensure that they are not culturally specific and that any individual studying English for academic purposes can use them. The students were

assessed in both tests by the same invigilators in the same examination room and in the morning shift. Moreover, the students' names were concealed and then replaced by code numbers, and no instruction or assistance was offered to them during the pre-posttests. The researcher and the designated course instructors administered the pre-posttests at the beginning and end of the intervention in a quiet classroom at the College of Business and Economics, NB-R. 309 for the pilot study and NB-R. 308 and NB-R. 309 for the main study.

3.6.1.2. Questionnaires

In this study, two kinds of questionnaires were designed and distributed. A questionnaire assessing participants' attitudes towards blended learning after the post-test, as well as a questionnaire for recording demographic data before the pre-test, was administered. Both groups completed the demographic questionnaires, which was given to them in order to determine their age and gender, following the pre-test. In addition, information regarding the experimental group's access to and usage of electronic devices was incorporated (See Appendices 2.1 and 2.2).

However, following the intervention, the experimental group received an attitude questionnaire to assess their views regarding blended learning-based reading comprehension. This came after the students had taken a post-test. The attitudes questionnaire towards blended learning was adapted from Tang &Chaw (2013) and Abu & Shaath (2012), and it was divided into two categories: closed-ended and open-ended, each comprising 33 items and three items, respectively. The closed-ended questionnaire items were again divided into groups under the following themes: Blended Learning Benefits (9 items), Technology Self-Efficacy (5 items), Challenges (7 items), Sociability (6 items), and Self-Learning (6 items). In addition, the closed-ended attitude questionnaire items were constructed using five point Likert scales; from strongly disagree= 1 to strongly agree=5. All of the participants who had participated in the treatment group took it following the intervention.

This was made because the students might have an in-depth understanding of blended learning after completing the intervention, and they might feel at ease rating the statements. The questionnaire items inquired respondents about their opinions regarding utilizing the blended learning based reading comprehension while using the blended learning approach to improve reading comprehension. Besides, the three open-ended questions were used for triangulating the quantitative data from the closed-ended questionnaire items. The first question concerned with

the advantages of BL in raising students' reading comprehension. The second open-ended question was about the challenges and issues connected with BL that the participants ran into throughout the intervention, and the third question asked participants about their opinions and suggestions for using the BL in their future reading comprehension lessons.

3.6.1.3. Focus Group Discussions

Selected participants from the experimental group also took part in focus group discussions (FGDs) with the objective of enriching the quantitative data

The researcher used a systematic random sampling technique to choose five participants for the pilot study and eight participants for the main study from the experimental group. The participants were asked about their attitudes toward utilizing a blended learning approach to enhance their reading comprehension. In other words, the FGDs were designed to gather data from participants' views on BL-based reading comprehension. Six guided discussion questions were used to establish the basis for the focus group discussions (FGDs) into three categories: the purposes of BL-based reading comprehension, its challenges, and their opinions and suggestions for using BL-based reading comprehension in the future. To that purpose, this tool could assist in triangulating the data collected via closed-ended and open-ended questionnaires on attitudes toward blended learning-based reading comprehension. The following tables provide an overview of the profiles of the discussants from the pilot and main study. However, to maintain ethical concerns, pseudonyms were used for the participants' profiles.

Table 2: FGD's Participants Profile for the Pilot Study

Discussants' Code Number	Gender	Section	Discussion Venue	Date of the Discussion
P1	M	2A	NB.R- 309	February 13,2024
P2	F			
P3	M			
P4	F			
P5	F			

Table 3: FGD's Participants Profile for the Main Study

Code of Participants	Gender	Section	Discussion Venue	Date of Discussion
P1	M	10B	Old Class Room No. 29	January 15, 2025
P2	F	10B		
P3	F	10B		
P4	M	10B		
P5	F	11A		
P6	M	11A		
P7	F	11A		
P8	F	11A		

3.6.2. Preparing Teaching Materials

Communicative English Language Skills I and II courses are offered for first year undergraduate students in almost all higher education institutions in the country. From these courses, CELSs I was chosen for this study since it was prepared by experienced Associate Professors from Addis Ababa University, Jima University, and Bahir Dar University, and all of which are first-generation higher education institutions. This would help to make the course material relevant and valuable. Therefore, the reading passages and its activities were adapted from the course Communicative English Skills I module for making the contents and activities similar to both the experimental and comparison groups. The researcher adapted Communicative English Language Skills I and prepared using the Learning Management System (LMS/Moodle) software for the experimental groups.

There are different language skills and activities (i.e. listening, speaking, reading, writing, grammar, vocabulary) in the module, but based on the objective of the research, the reading passages and their respective reading comprehension activities were adapted for this study. There are five units in the module. In each unit, there is a reading passage followed by reading comprehension activities. Depending on the length of the experiment, four reading passages including the reading comprehension activities (from chapter one up to chapter four) were taken purposely for the main study. In addition, the selected reading passages and the activities under

each reading passages were converted into the LMS/Moodle online platform material for the experimental group. The course instructors received the prepared materials after training was given. Although both groups used the module Communicative English Skills I, the control group did not receive any of the content created using the blended learning approach; instead, they received traditional face to face instruction of the current module.

Since LMS/Moodle was available at the selected university, it was chosen as a learning platform for the experimental group. Because it is not restricted by places or institutions, and it allowed participants to access the reading materials and activities from wherever. Thus, for the experimental group, the reading materials and activities adapted from the module CELSs I was prepared in an e-learning material using the online learning platform (Moodle). In addition, an emphasis on group participation that gives students the ability to engage in readings with a purpose and where they comprehend and produce the target language was placed on the reading comprehension resources.

Reading comprehension rubrics such as finding main idea, finding factual information, finding the meaning of vocabulary in the context, making inferences and identifying references were considered in the material. The experimental group's training material incorporates these techniques within different chapters. In addition, the researcher modified the existing activities to make them suitable for the online learning platform for the treatment group.

The Moodle training materials incorporated online discussions addressing the reading comprehension rubrics. For instance, during chat and forum sessions, discussion topics like reading and reading comprehension, stages of reading, components of reading, and techniques for guessing vocabulary were addressed. Although the control group's course materials lacked any e-learning components, they contained the same content, with the online segments being presented and explained verbally.

In general, the course has three contact hours. Two of them were spent in face-to-face instruction in the classroom, while one hour was provided to online discussions for the experimental group. They were typically received online resources for improving their reading comprehension skills in addition to face-to-face instruction, and they took part in discussion forums and chat sessions. On the other hand, the control group spent the three contact hours receiving traditional face to

face classroom instruction (See Appendices 3 and 26). Both groups, however, used similar reading comprehension resources that were modified from the Communicative English Language Skills I module, with the exception of the blended learning approach.

3.6.3. Conducting the Experiment

The researcher felt that having the same teacher to train both group would help to reduce instructor-related extraneous variables. Thus, to reduce researcher's bias and to minimize risks to internal validity, it is advised that the same individual teach both groups (Ary et al., 2002). As a result, both groups in the pilot and main study were instructed by the designated course instructors, who were not the researcher, with the intervention lasting six weeks in the pilot study and 12 weeks in the main study. However, the course instructor chosen for the main study had a training certificate in online language instruction, which could facilitate the delivery of the online session (See Appendix 16). Participants in the experimental group had access to online resources outside EFL classroom through electronic devices like their personal computer, tablet, cellphone etc. It was checked whether they had the devices or not using the demographic questionnaire.

In other words, the comparison group was trained using the conventional face-to-face method. In contrast, the treatment group received online instruction with the inclusion of blended learning activities through online learning. Additionally, since the Moodle platform is accessible everywhere, the treatment group had access to online resources using their smartphones and other devices whenever and wherever they were. An online learning management system (LMS/Moodle) was used to create the reading materials that were modified from the Communicative English Skills I course and provided to the experimental group. However, the communicative English skills I course module with no online features was used for the comparison group.

In order to further integrate the learning, the experimental group was given access to the reading materials and assignments online. In other words, digital technology was applied to increase student participation and support the traditional teaching method. Using the LMS/Moodle platform, activities for discussion and question-and-answer forums, digital resources, and virtual learning environments were included for the treatment group.

3.7. Methods of Data Analysis

As mentioned in Section 3.2 of this chapter, a quasi-experimental design with a mixed approach was employed in this study. As a result, both quantitative and qualitative analyses of the data were conducted. The gathered pre-posttest quantitative data were analyzed using descriptive statistics, paired-sample t-tests, and independent sample t-tests to test the study's hypotheses and answer the research questions. Besides, a statistically significant disparity between the treatment and comparison groups, as well as within the treatment and comparison groups, was investigated by comparing the pre- and post-test results. The participants' pre- and post-test answers were corrected using the provided answer keys. Moreover, the 35 reading comprehension questions were divided into five categories, and each participant's scores was assessed using these five criteria [i.e., determining the main idea (4 questions), locating factual information (9 questions), guessing vocabulary in context (9 questions), making inferences (10 questions), and recognizing references (3 questions)].

In addition, a five-point Likert scale was used to score the information obtained from 33 questionnaire items (strongly disagree-1 to strongly agree-5), and the responses were organized into five categories (i.e., blended learning benefits, challenges, technology self-efficacy, sociability, and self-learning). Besides, they were further analyzed and interpreted to determine the attitudes of participants in the experimental group toward blended learning-based reading comprehension. Furthermore, three open-ended questions were also asked on participants' views of BL-based reading comprehension. Again, five members for the pilot study and eight for the main study of the experimental group participated in the FGDs. Thus, the qualitative data collected from the open-ended questions and focus group discussions were thematically coded and analyzed using Nvivo 10 software. The following sub sections provide an explanation of the pre-posttests, questionnaires, and focus group discussions data analysis procedures.

3.7.1. Analysis of the Pre-Posttest Results

Since this study was quasi experimental study, the collected data was expressed in quantitative method. Therefore, the pre-posttests results that were collected from the experimental and control groups were analyzed using T-tests.

In addition, mean scores and standard deviation for each dependent variable on the pre- and post-tests for each participant were computed. An Excel sheet was used to record and organize all of the results. Each participant obtained a score, and the pre- and post-test averages for each dependent variable were calculated. After that, the data were analyzed using the Statistical Package for Social Sciences (SPSS) Version 26. The control and experimental groups were compared based on participants' overall reading performance under the headings of main idea, factual information, vocabulary, inferences, and references.

Besides, to determine whether there was a statistically significant difference between the experimental and comparison groups with regard to their reading comprehension components, an independent-samples t-test was performed using the SPSS software. According to Dornyei (2007), independent-sample T-tests are used for study designs in which the outcomes of two independent groups are compared. Therefore, an independent Samples T-test was run on SPSS to analyze the test results and determine whether there was a significant statistical disparity in the participants' reading comprehension between the experimental and control groups.

Moreover, a paired-samples t-test was performed to determine whether there was a significant statistical difference between the pre- and post-test mean scores of the students in the experimental and control groups with respect to their reading comprehension. According to Voelker et al. (2001), paired-samples t-test compares one set of measurements with another set from the same sample. It is a common practice in experiments to compare pre- and post-test results to see if a significant shift has occurred. Therefore, to determine whether there was a statistically significant difference within and between the pre- test and post-test mean reading comprehension scores of the students in the experimental and control groups, a paired samples T-test was performed using the SPSS version 26 package. Prior to data analysis, the alpha threshold of significance $p<.05$ (95% confidence) was established, and it was adhered to throughout the entire study.

In this research, since the reading comprehension test scores was continuous variable, it was viable to administer T-tests. However, the magnitude of the impact is not disclosed by the T-tests; they merely indicate whether there is a substantial difference (if any). Effect size was therefore computed. Cohen's d is the effect size metric; it is used in conjunction with the t-test.

Thus, to calculate Cohen's d for the experimental and control groups based on the provided pretest and posttest data, the following formula was used:

d= (Group A mean - Group B mean)/ Pooled standard deviation

Where the pooled standard deviation is:
(Standard deviation of group 1 + Standard deviation of group 2) / 2 (Muijs, 2004; Cohen, 1992).

Cohen (1992) further argues that as the association between two variables strengthens, the effect size also increases. Therefore, in order to evaluate the significance of the effect size, the Cohen's d effect size (d) was initially calculated. He described the criteria as follows:

- <.2 = small effect
- >.2-.5 = medium effect and
- >.5 = large effect size

Therefore, the results obtained for Cohen's d from both the control and experimental groups provide information about the effect size of the intervention on overall reading performance were analyzed and interpreted. The interpretation of Cohen's d was done based on the magnitude of the effect size on the above guidelines.

The practical importance of raising students' reading comprehension was also ascertained using Cohen's d effect size. More precisely, an independent samples t-test and mean score analysis were employed to examine the significant enhancements in the post-test results of both the experimental and control groups. Furthermore, the study carried out the method of descriptive analysis and paired-samples t-test to examine if there was a significant difference in the experimental group's and the control group's mean scores between the pre-test and post-test.

Therefore, inferential and descriptive statistics were applied to check whether there was a statistically significant difference between the findings of the pre- and post-tests. For a thorough understanding of the gathered data, using both forms of statistics is advisable. The study's hypotheses, therefore, were addressed by combining them throughout the analysis. In general, descriptive statistics such as the mean and standard deviation and inferential statistics such as the T-value, degree of freedom, level of significance, and effect size were used to determine whether

there was a statistically significant difference within and between the treatment and comparison groups.

3.7.2. Analysis of the Questionnaire

In this research, two kinds of questionnaires were employed. A questionnaire assessing participants' attitudes towards blended learning after the post-test, as well as a questionnaire for recording demographic data following the pre-test, was administered. After the pre-test, both groups completed the demographic questionnaire, which was given to them in order to determine their age and gender. In addition, information regarding the experimental group's access to and usage of electronic devices was incorporated. Besides, following the intervention, the experimental group received an attitude questionnaire to assess their views regarding blended learning-based reading comprehension. This came after the students had taken a post-test.

Descriptive statistics, such as frequency and percentages, were used to assess the statistical data obtained from the close-ended questionnaire. In addition, the advantages of blended learning, technology self-efficacy, blended learning challenges, sociability in blended learning, and self-learning in blended learning were taken into account when investigating participants' opinion using the implementation of blended learning-based reading comprehension.

3.7.3. Analysis of Focus Group Discussions

Thematic analysis was used to transcribe and analyze the qualitative information gathered from focus group discussions and open-ended questions. While analyzing the qualitative data, the main themes that were taken into account were the advantages, difficulties, and their opinions on incorporating blended learning approaches into their reading lessons going forward.

The data gathered from FGDs were transcribed and analyzed using NVIVO 10 software. The dataset was initially coded with 22 nodes. As a result, axial coding was employed following the 22 open codes. Based on the codes' relationships and similarities, benefits, challenges, and suggestions about the BL method were the three codes that were found after filtering and classifying them into categories. The FGDs data analysis and discussion were done based on these three themes (See Table 27).

3.8. Validity and Reliability of Instructional Materials and Research Instruments

The validity and reliability of the tests and the online training materials were examined prior to data collection. Even though pre-posttests were taken from standardized TOEFL Material, four reviewers checked the validity of the pre- and posttests reading passages and questions.

3.8.1. Instructional Materials

The researcher believed that the following reasons would support the validity of the current instructional material: First, the existing course material is written by experts and experienced English language instructors from three 1st generation universities (Addis Ababa University, Jimma University, and Bahir Dar University). Second, the researcher received helpful feedback on the contents and design of the activities from the supervisor as well as from experts through panel discussion, particularly those who have been instructing the course frequently. In addition, the online material for the experimental group was confirmed by an expert on the preparation and design of online learning resources.

3.8.2. Validity and Reliability of Instruments

Before gathering data, the validity and reliability of the research instruments were confirmed. Four reviewers who have more than 15 years of experience in teaching English checked the face and content validity of pre-post-test reading comprehension questions, questionnaires, and focus group discussion questions (See appendix 1). In addition, the instruments, which included instructions, item contents, and time limitations, were put through a pilot test to see if they were appropriate, clear, and free of errors in the measuring processes.

3.8.2.1. Evidence of Validity from Reviewers

Before gathering the data, four TEFL instructors from the English Language Department at Kotebe University of Education (KUE) and Debreberhan University (DBU) reviewed and assessed the tests, questionnaires, and focus group discussions for their content and face validity. The selection of the reviewers was mostly based on their professional experience as English language instructors at KUE, DBU, and other Ethiopian higher institutions. Since the researcher and reviewers have good friendship and positive work relationship, the reviewers were willing to

participate in the process. Thus, the researcher's acquaintance and good working relationship with reviewers made it more likely that they gave consent to participate in the review.

A validation form modified from Chen (2002)) was provided to the reviewers together with the drafted items in all instruments, and they made comments on the items' appropriateness and clarity. With regard to comments and feedback, the reviewers found an item that was double-barreled. For example, item 1 stated, "Blended learning enhances my motivation and interest". Here, interest and motivation are different psychological concepts. Motivation was therefore left out. In addition, items 15 and 16 were removed from the technology self-efficacy heading because they had nothing to do with the topic. Instead, the statement "My computer proficiency enables me to participate in online discussion forums and chats" was added on their place. As stated in item 17, "Low internet speed and connectivity issues were the challenges to reach difficulties with blended learning online resources". The phrase "to reach difficulties" was omitted from this item because it would be confusing for respondents. Instead, the statement was modified as follows: "Low internet speed and connectivity issues were the challenges with blended learning online resources." Moreover, it was noticed that the present and past tenses were not consistently used, and these were changed.

3.8.2.2. Evidence for the Pilot and Main Study's Reliability

It is advisable to carry out preliminary research to strengthen the credibility of the main investigation. Holliday (2016) emphasizes the use of pilot testing as a useful technique to evaluate and guarantee the quality of the final study. This entails assessing the methodology, data collection instruments, and data analysis processes used in the study. Thus, the principal objective of the pilot study was to confirm the reliability of the research tools and collect relevant data for the main research. The items' degree of internal consistency is shown in the tables below, where the Cronbach's alphas for the pilot and main studies were .897 and .914, respectively. This indicates that the survey's items were reliable and accurately measure the same underlying concept. The similar demographics and common educational background among the participants may account for the alpha results. The key difference between the pilot and main study participants was that they were drawn from two distinct batches. The participants in the pilot study did not take part in the data collection for the main study.

Table 4: Statistics for Questionnaire Reliability of the Pilot Study

Reliability Statistics		
Cronbach's Alpha	N of Items	Status
.897	33	Acceptable

Table 5: Statistics for Questionnaire Reliability of the Main Study

Reliability Statistics		
Cronbach's Alpha	N of Items	Status
.914	33	Acceptable

3.9. Ethical Considerations

Informed permission and secrecy were regarded as ethical considerations in this dissertation to preserve the identity of participants. The appropriate body was consulted for approval before the study was carried out. All participants got awareness about the study's objectives, the procedures to be followed before collecting data, and their consents were confirmed. In addition, awareness was created for the participants that all information, along with the pre- and posttest scores and biographical information gathered, were only be used for the purpose of research. They were told that their identities would not be revealed anywhere in the research study, and they could quit the study at any time without facing any consequences. In other words, each participant in the selected classes gave their voluntary written consent to participate after being fully informed about the procedure (See appendices 18 and 20).

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS FOR THE PILOT STUDY

4.1. Introduction

The general objective of the study was to investigate the effects of blended learning on university students' reading comprehension of first-year students at Addis Ababa University's College of Business and Economics. This chapter addresses the data presentation and analysis of the pilot study. The Pilot study was done between 01 January 2024 to 13 February 2024 where 45 participants were enrolled in both experimental and control groups to receive intervention for six weeks. As indicated by the pretest result, both experimental and control groups of participants had equivalent scores of English reading comprehension before the experiment. At the end of the intervention, both groups took a post test. The analysis and discussion of the pre- and post-intervention data, the attitudes of the experimental group participants toward BL-based reading comprehension and the difficulties they encountered during the process, and the FGD data acquired from the five members of the experimental group who were chosen using a systematic random sampling procedure were included. Thus, the data gathered from the pilot study is presented in the following sub sections.

4.2. Pre-posttest Results for Both Groups (Pilot)

In this pilot study, a pre-post intervention reading comprehension test was employed that had been adapted from the TOEFL (2023) to gauge the reading comprehension of experimental and control groups. Participants read three fairly lengthy reading passages, and then had an hour to answer 35 multiple-choice questions. The pre-posttest scores of the participant were scored, graded and computed using the TOEFL answer key.

4.3. The Two Groups' Aggregate Reading Comprehension Performance (pre-test)

Five dependent variables that constitute the evaluation of the overall reading comprehension performance from pretest are: finding the main idea; finding factual information, determining vocabulary meaning in context; drawing inferences; and identifying references. The total reading performance of the experimental and control groups was analyzed by descriptive statistics and independent-sample t-test to compare the reading comprehension ability.

Table 6: Results of the Descriptive Statistics and Independent Samples T-tests of Both Groups (Pre-test)

Components of Reading Comp.	Group	N	Mean	St. d	T-value	Sig-value	Sig. level
Main Idea	Experimental	23	3.043	.705	1.006	.320	Not sig.
	Control	22	2.818	.795			
Factual Information	Experimental	23	7.826	1.072	.971	.337	Not sig.
	Control	22	7.454	1.471			
Vocabulary	Experimental	23	7.434	1.532	.699	.489	Not sig.
	Control	22	7.136	1.320			
Inference	Experimental	23	6.565	1.829	.522	.605	Not sig.
	Control	22	6.272	1.931			
Reference	Experimental	23	2.478	.510	-1.056	.297	Not sig.
	Control	22	2.636	.492			
Overall reading comprehension achievement	Experimental	23	78.132	10.215	.797	.430	Not sig.
	Control	22	75.450	12.300			

As illustrated in the table above, the control group (N = 22) had an average mean of 75.450 with regard to total reading comprehension achievement. Whereas the experimental group (N = 23) scored an average mean of 78.132. According to the descriptive statistics in the above table, the experimental group appeared to have performed marginally better than the control group. Although the mean average score of the treatment group is slightly greater than that of the control group, the independent sample t-test results showed no statistically significant differences between the two groups' overall reading comprehension performance at the point $p<0.05$ ($t = .797$, $p = .430$).

4.3.1. Reading Comprehension Achievement on Finding Main Idea

Understanding the main idea is essential to comprehend the general meaning, structure, organization, and goals of the writer of a passage as well as the text (Mikulecky & Jeffries, 2007). The ability to identify a text's core ideas is a crucial component of reading comprehension (Hare and Milligan, 1984). Thus, finding the main theme is crucial since it aids readers in understanding the paragraph they are reading as well as in remembering the information in the

future. The reading achievement of the experimental and control groups to comprehend the main idea was assessed using descriptive statistics and an independent-sample t-test.

Table 7: Results of the Descriptive Statistics and Independent Sample T-tests on Both Groups' Score of Finding Main Idea (Pre-test)

Component	Group	N	Mean	St.d	T-value	Sig-value	Significance level
Main idea	Experimental	23	3.043	.705	1.006	.320	Not sig.
	Control	22	2.818	.795			

The experimental group (N = 23) had an average mean of 3.043, compared to the control group's (N = 22) average mean of 2.818, as seen in table 7 above. The results of the descriptive statistics analysis showed that the experimental group's mean score for finding the main idea was a bit higher than that of the control group. However, the independent samples test results showed no statistically significant disparity in the reading comprehension skills between the control and experimental groups (t =1.006, p =.320).

4. 3.2. Reading Comprehension Achievement on Finding Factual Information

According to King and Stanley (2004), in order to find factual information from text, readers must quickly scan through certain textual details, and it is explicitly stated in the text. Furthermore, according to Mikulecky and Jeffries (2007), the scanning strategy is a reading comprehension technique that makes use of readers' attention to the title, table of contents, and other elements in order to locate specific information without reading the entire text. Therefore, using descriptive statistics and an independent-samples t-test, the reading abilities of the experimental and control groups were compared with regard to finding factual information.

Table 8: Results of the Descriptive Statistics and Independent Samples T-tests on Both Groups' Score of Finding Factual Information (Pre-test)

Component	Group	N	Mean	St.d	T-value	Sig-value	Significance level
Factual	Experimental	23	7.826	1.072	.971	.337	Not sig.

information	Control	22	7.454	1.471		

According to the above indicated data in table 8, the experimental group (N = 23) had an average mean score of 7.826, while the comparison group (N = 22) received an average mean score of 7.454. Even while the average mean score of the experimental group appeared to be higher than that of the control group, the independent samples t-test findings did not reveal any statistically significant differences in factual information regarding reading comprehension performance (t =.971, p =.337).

4.3.3. Reading Comprehension Achievement on Guessing Vocabulary in Context

Reading comprehension is largely dependent on vocabulary, so vocabulary and reading ability are closely related. Readers can reduce the amount of trouble they have comprehending the information in the text by being aware of word meanings. According to Brown (2004), a reader's comprehension of the text is facilitated by a larger vocabulary, and this shows that an increase in vocabulary size has a positive impact on reading comprehension.

Table 9: Results of the Descriptive Statistics and Independent Samples T-tests on Both Groups' Score of Finding the Meaning of Vocabulary in Context (Pre-test)

Component	Group	N	Mean	St.d	T-value	Sig-value	Significance level
Vocabulary	Experimental	23	7.434	1.532	.699	.489	Not sig.
	Control	22	7.136	1.320			

Through descriptive statistics and an independent-samples t-test, the reading comprehension achievement of the experimental and control groups was compared to find the meaning of vocabulary in context. The experimental group (N = 23) got a vocabulary average mean of 7.434, while the control group (N = 22) scored a vocabulary average mean of 7.136, as can be seen in the above table. According to the average mean score, the experimental group did a little bit better on vocabulary questions than the control group. In addition, the t-value of 0.699 suggests a relatively small difference between the means of the experimental and control groups, and the significance level is 0.489, which is greater than the commonly used threshold of 0.05. Thus,

based on the data in table 9 above, the independent samples t-test findings showed no significant difference between the control and experimental groups' reading comprehension performance in terms of vocabulary (t = .699, p =.489).

4.3.4. Achievement in Reading Comprehension with Regard to Making Inferences

To make inferences, more than just literal comprehension is required. Students may initially struggle to give proper answers since the conclusions drawn from inference questions are based on information that is presented in the text but not explicitly stated. According to Nuttall (1996), students can draw conclusions by combining their literal interpretation of the text with their own past knowledge and intuitions. The ability to infer conclusions from reading was compared between the experimental and control groups employing descriptive statistics and an independent-sample t-test.

Table 10: Results of the Descriptive Statistics and Independent Samples T-tests on Both Groups' Score of Making Inferences (Pre-test)

Component	Group	N	Mean	St.d	T-value	Sig-value	Significance level
Making Inferences	Experimental	23	6.565	1.829	.522	.605	Not sig.
	Control	22	6.272	1.931			

As can be seen in table 10, the control group (N = 22) had an average mean score of 6.272 for making inferences, while the experimental group (N = 23) had a score of 6.565. Additionally, the findings of the independent samples t-test from the pretest revealed no differences between the comparison and treatment groups in terms of their ability to draw inferences from reading (t = .522, p =.605).

4.3.5. Reading Comprehension Achievement in terms of Identifying References

Readers will comprehend the material better if they can distinguish between reference terms and the word to which they refer (King & Stanley, 2004). The ability to identify references from a reading text was compared between the experimental and control groups employing descriptive statistics and an independent-sample t-test.

Table 11: Results of the Descriptive Statistics and Independent Samples T-tests on Both Groups' Score of Identifying References (Pre-test)

Components	Group	N	Mean	St.d	T-value	Sig-value	Sig. level
Identifying References	Experimental	23	2.478	.510	-1.056	.297	Not sig.
	Control	22	2.636	.492			
Total score of the pre test	Experimental	23	78.132	10.215	.797	.430	Not sig.
	Control	22	75.450	12.300			

In terms of references, the experimental group (N = 23) achieved an average mean score of 2.478, while the control group (N = 22) scored an average mean score of 2.636, as shown in table 11 above. According to the average mean scores of the two groups, the control group exceeded a little more than the experimental group in terms of references. However, the findings of the independent samples t-test using the results of the pretests showed no significant difference between the experimental and control groups' reading performance in terms of references (t = -1.056, p =.297).

Regarding overall reading comprehension achievement, the experimental group (N = 23) had an average mean of 78.132, while the control group (N = 22) had an average mean of 75.450, as indicated by the average mean in the above table. A comparison of the control and experimental groups revealed that the treatment group was marginally superior. However, the independent sample t-test results (t = .797, p =.430) showed that there were no statistically significant differences in the control and experimental groups' overall reading comprehension performance at the point $p<0.05$.

4.4. Analysis of the Post-test (Pilot)

Following six weeks of intervention, the reading comprehension abilities of the two groups were compared using the posttest results. The results were analyzed using descriptive statistics, independent samples t-tests, and paired samples t-tests.

Since the questions on the posttest were objective and included answer keys, just like the pretest, the researcher graded the papers for the two groups. Each dependent variable's average mean

score was computed after the researcher had completed grading. Every mean score for each of the variables was entered and arranged in an Excel spreadsheet. SPSS version 26 was then used to load and analyze the data. Consequently, the analysis of the pre- and post-tests in relation to each research question is provided in the following section.

The first objective of this study was to determine whether the experimental group's reading comprehension performance (finding the main idea, finding factual information, finding the meaning of vocabulary in the context, drawing inferences, and identifying references) had improved between pretest and posttest or not. Any statistically significant variations between the experimental group's posttest results and pretest outcomes were examined using descriptive analysis and paired sample t-tests. In addition, to see the magnitude of the result, effect size was computed.

Table 12: Descriptive Statistics and Paired Samples T-test Results of the Experimental Group (Posttest)

Components	Tests	Mean	Standard Deviation	T- test	Sig. value	Significance	Effect Size	Status
Main Idea	Pretest	3.043	.705	-2.598	.016	Significant	0.55	Large
	Posttest	3.434	.506					
Factual Information	Pretest	7.826	1.072	-3.140	.005	Significant	0.347	Medium
	Posttest	8.304	.822					
Vocabulary	Pretest	7.434	1.532	-.658	.517	Not Significant	0.113	Small
	Posttest	7.608	.838					
Inferences	Pretest	6.565	1.829	-2.366	.027	Significant	0.334	Medium
	Posttest	7.173	1.072					
references	Pretest	2.478	.510	-2.299	.031	Significant	0.824	Large
	Posttest	2.782	.421					
Total score of the	Pretest	78.132	10.215	-5.501	.000	Significant	0.854	Large
Total Score of the	Posttest	83.462	6.836					

Students' reading performance was examined using a paired samples t-test (paired t-test) to determine the impact of BL-based reading comprehension on their ability to find main idea (out of 11.44%), finding factual information (out of 25.71%), guessing vocabulary (out of 25.71%), making inferences (out of 28.57%), and identifying references (out of 8.57%). In the five-component posttests, the participants' reading skills improved. As indicated by Table 10 above, there was a statistically significant difference in scores between the pretest and the posttest at the

p<.05 with moderate effect size d= 0.854. This difference pertained to all components except the ability to interpret words in context (t = -.658, p =.517).

Thus, in the posttest, participants in the experimental group demonstrated statistically significant improvement in their performance in majority of the components (finding main idea, finding factual information, making inferences and identifying references), except for determining the meaning of vocabulary in the context. In summary, the majority of the components showed significant variations in posttest scores in comparison to pretest scores (p<.05). One possible explanation for the experimental group's improvement in overall reading proficiency compared to their pretest results might be that the BL allowed participants to read and participate in forum discussions and chats without any time or location restrictions.

As can be shown in table 12 above, in addition to the T-test, the magnitude of the effect size (Cohen's d) was calculated for each reading components. The main idea component in reading exhibits a large effect size (Cohen's d = 0.55), suggesting a noteworthy difference between pretest and posttest scores in understanding the main concepts. Factual information also shows a medium effect size (Cohen's d = 0.347), indicating a modest change in comprehension of factual details. Vocabulary, related to reading, demonstrates a small effect size (Cohen's d = 0.113), suggesting a relatively slight impact on word comprehension.

Inferences in reading exhibit a medium effect size as well (Cohen's d = 0.334), signifying a noticeable yet not highly pronounced change in making logical deductions. References pertaining to reading skills display a large effect size (Cohen's d = 0.824), indicating a significant improvement between pretest and posttest scores in referencing information. The total score, representing the overall reading performance, demonstrated a large effect size (Cohen's d = 0.584), suggesting a meaningful enhancement in participants' reading abilities. These effect size analyses provide insights into the magnitude of changes within each reading component.

The second objective of the study was to determine whether the control group's reading abilities had improved between the pretest and posttest in terms of the reading comprehension components. The results of the posttest were compared to the results of the pretest using

descriptive analysis and paired sample t-tests to determine whether there were any statistically significant differences.

Table 13: Descriptive Statistics and Paired Samples T-test Results of the Control Group (Pilot)

Components	Tests	Mean	Standard Deviation	T- test	Sig-value	Significance	Effect Size-d	Status
Main Idea	Pretest	2.818	.795	-3.215	.004	Significant	0.967	Large
	Posttest	3.500	.597					
Factual Information	Pretest	7.454	1.471	-1.904	.071	Not Significant	0.300	Medium
	Posttest	7.863	.940					
Vocabulary	Pretest	7.136	1.320	.188	.853	Not Significant	-0.030	Small
	Posttest	7.090	1.019					
Inferences	Pretest	6.272	1.931	-1.289	.211	Not Significant	0.263	Medium
	Posttest	6.727	1.077					
References	Pretest	2.636	.492	.568	.576	Not-Significant	-0.172	Small
	Posttest	2.545	.509					
Total score of the Pretest		75.450	12.300	-2.08	.050	Not Significant	0.310	Medium
Total Score of the Posttest		79.320	9.791					

According to the results of the descriptive statistics, a slight variation in the control group's general reading performance was observed in all components of the post-test, except for finding the main idea. Each of the posttest components' average mean scores is not significantly higher than the pretest's, as the above table illustrates. However, when it came to identifying the main idea, the participants' posttest performance (m = 3.5) outperformed in comparison to the pretest performance (2.8). This demonstrated a significant improvement in the participants' post-test scores for getting the main idea.

The impact of face-to-face instruction in reading on students' reading comprehension performance was investigated using a paired samples t-test. Specifically, students were tested on their ability to identify references (out of 8.57%), make inferences (out of 28.57%), guess vocabulary (out of 25.71%), find the main idea (out of 11.44%), and find factual information (out of 25.71%). The above table indicated that in most components, participants' performance on the posttest was no better than their pretest performance. The pretest and posttest scores in

terms of (factual information: t = -1.904, p =.071; vocabulary: t =.188, p =.853; inference: t = -1.289, p =.211; reference: t =.568; p =.576) did not show statistically significant changes at the p<.05 level. However, in finding the main idea, the mean difference of the participants' performance in both tests was different and there was statistically significant difference at the p<.05 level in scores of its pretest and posttests (t = -3.215, p=.004). The control group exhibited a significant enhancement in the main idea component, characterized by a moderate effect size (d = 0.967). Conversely, there was a marginally significant alteration in the total score from the pretest to the posttest, and no significant disparities were observed in the overall pretest-posttest outcomes at $p < 0.05$ ($t = -2.08$, $p = 0.50$).

As indicated in table13, the results of the reading comprehension pretest and posttest scores of the comparison group reveal diverse impacts across different components. The main idea component demonstrates a substantial positive effect (Cohen's d = 0.967), indicating a significant improvement in understanding key concepts from the pretest to the posttest. Factual information displays a modest positive effect (Cohen's d = 0.300), suggesting a medium enhancement in comprehension of factual details. On the contrary, vocabulary exhibits a small negative effect (Cohen's d = -0.030), implying a slight decrease in the impact on word comprehension. Inferences show a medium positive effect (Cohen's d = 0.263), indicating a noticeable but not highly pronounced change in logical deduction skills.

References, however, demonstrate a small negative effect (Cohen's d = -0.172), suggesting a modest decrease in referencing information. The Total score, representing overall performance, reflects a medium positive effect (Cohen's d = 0.310), indicating a modest enhancement in participants' total scores from the pretest to the posttest. These findings highlight both positive and negative shifts within specific reading comprehension components, offering a comprehensive understanding of the varied impacts observed.

To sum up, both groups displayed a marginally significant advancement in the total score from the pretest to the posttest. Despite the experimental group achieving a higher mean total score post-intervention, the difference attained statistical significance (Sig. Value = 0.000). Conversely, the control group showed a marginally significant improvement in the mean total score from pretest to posttest (Sig. Value = 0.050), albeit not as pronounced as the experimental

group. The intervention appears to have a more substantial impact on the overall reading performance of the experimental group, supported by a statistically significant improvement with the effect size (d = 0.854).

The third research objective was to assess how well the experimental group (BL-based reading comprehension) and control group (face-to-face reading instruction) scored in terms of finding the main idea, factual information, vocabulary, inferences, and references on the posttest. The data were examined using descriptive statistics and an independent sample t-test. It appears logical to assume that any significant discrepancies in their mean scores on the post-test would be caused by the intervention, as the pretest did not reveal any significant differences between the two groups at the beginning of the study. The descriptive and inferential statistics that were calculated for both groups' final post-test scores are shown in the table below.

Table 14: Results of the Descriptive Statistics and Independent Samples T-test of Both Groups in terms of Overall Reading Performance (Posttest –pilot)

Components	Control Group			Experimental Group			T-value	Sig. Value	Significance
	N	Mean	Standard deviation	N	Mean	Standard deviation			
Main idea	22	3.500	.597	23	3.434	.506	-.395	.694	Not Significant
Factual information	22	7.863	.940	23	8.304	.822	1.675	.101	Not Significant
Vocabulary	22	7.090	1.019	23	7.608	.838	1.864	.069	Not Significant
Inferences	22	6.727	1.077	23	7.173	1.072	1.394	.171	Not Significant
References	22	2.545	.509	23	2.782	.421	1.697	.097	Not Significant
Total score of the posttest	22	79.320	9.791	23	83.462	6.836	1.651	.106	Not Significant

The mean scores for finding the main idea in the experimental (M = 3.4) and control (M = 3.5) groups were slightly different for participants in both groups. To determine whether there was a statistically significant difference between the two groups with regard to the main idea, an independent samples t-test was run. According to the mean score analysis results, participants in

the control group slightly outperformed those in the experimental group (M = 3.5, M = 3.4), and the scores for both groups (t = -.395, p =.694) did not differ statistically significantly at the p<.05 level.

As can be displayed in table 14 above, the experimental group (M = 8.304) outperformed better than the control group (M = 7.863) in terms of finding factual information. To investigate the effect of BL-based reading on students' reading comprehension performance in finding factual information in the posttest, an independent samples t-test was conducted. Even though the two groups' mean average scores (M = 8.304 and M = 7.863) revealed different outcomes, neither group's means for finding factual information (t = 1.675, p =.101) had a statistically significant difference at p<.05.

The performance of both groups in answering contextual vocabulary questions was almost identical, as the above table (M = 7.090 and M = 7.608) demonstrates. The effect of BL-based reading on the students' vocabulary reading comprehension ability in the posttest was investigated using an independent samples t-test. The experimental group seemed to perform better (M = 7.608) than the control group (M = 7.090) in answering contextual vocabulary questions. However, at the p<.05 level, there was no statistically significant difference in vocabulary performance between the two groups (t =1.864, p =.069).

As table 14 above displayed, the experimental group (M = 7.173) and the control group (M = 6.727) both had nearly identical average mean scores for reading comprehension while making inferences. To investigate the impact of BL-based reading on students' reading comprehension abilities when making inferences in the posttest, an independent samples t-test was utilized. Although the experimental group performed better (M = 7.173) than the control group (M = 6.727) in average mean scores, there was no statistically significant difference (t = 1.394, p =.171) at the p<.05 level.

According to the data in table 14, the performance of the experimental and control groups in terms of references was nearly the same (M = 2.545, M = 2.782, respectively). The effects of BL-based reading on the students' reading comprehension answering reference questions in the

post-test were investigated using an independent samples t-test. Consequently, at the p<.05 level, there was no statistically significant difference in references (t = 1.697, p =.097).

Generally, according to the average mean score displayed in the above table, the experimental group (N = 23) had an average mean of 83.46 in terms of overall reading achievement, while the control group (N = 22) had an average mean of 79.32. According to the descriptive statistics, the experimental group performed better than the control group. Although the average mean score of the experimental group seemed higher than that of the control group, the results of the independent samples t-test showed no statistically significant differences at the point p<0.05 in the overall reading performance between the control and experimental groups (t = 1.651, p =.106).

The results and analyses of the fourth specific research objective of the pilot study are similar to those of the main study, with the exception of the number of participants. Consequently, to avoid unnecessary replication, the analysis of the data collected for the fourth research objective of the pilot study is purposefully excluded.

4.5. Major Preliminary Findings of the Pilot Study

The research employed a range of data analysis techniques, such as mean, frequency, and percentage for descriptive statistics, and effect sizes, paired samples tests, and independent samples t-tests for inferential statistics. The major preliminary findings from both the quantitative and qualitative data are as follows:

- According to the pre-test results, there was no statistically significant difference in the reading comprehension performance levels of the study participants prior to the implementation of the intervention.
- Following the blended learning intervention, there was a statistically significant improvement in the experimental group's overall reading comprehension as well as in the reading rubrics such as finding the main idea, finding factual information, drawing inferences, and identifying references. The main information utilized in this investigation was the pre- and post-test results. The experimental group's pre- and post-test average scores were compared using a t-test (paired samples t-test). At a p<0.05 level of

significance and a moderate effect size, the paired samples t-test findings revealed that there was a statistically significant difference between the pre- and post-tests within the experimental group. The four reading comprehension rubrics (main idea, factual information, inferences and references) showed a statistically significant difference. It might imply that the treatment provided to the experimental group is more likely to be responsible for the observed outcome than accidental. However, the student's ability to guess vocabulary in context in a reading comprehension posttest of the treatment group did not show noticeable effects at the point $p<0.05$ level of significance with a weak effect size.

- On the contrary, according to the statistical analysis of the paired samples test in the posttest, the students in the control group generally did not show an improvement in their reading skill at the point $p<0.05$ level of significance with modest effect size. There was no significant improvement in the comparison group's overall reading comprehension as well as in the reading sub skills scores such as finding factual information, guessing vocabulary in context, drawing inferences, and identifying references at the point $p<0.05$ level of significance. Despite this, there was a moderate effect size and a significant difference on finding the main idea component at the $p<0.05$ level of significance.
- While the experimental group's results indicated a statistically significant change, there was no statistically significant difference between the comparison and experimental groups on their post-test reading comprehension test. The total rubrics and the post-test total scores did not display any statistically significant differences between the experimental and control groups. Comparable mean scores for each component showed that both groups performed similarly in terms of their post-test reading skills.
- The majority of students in the experimental group were found to have a favorable attitude toward the blended learning-based reading comprehension method. Twenty-three participants were requested to complete the designed questionnaire to learn more about their opinions regarding BL-based reading comprehension. Based on the results, it was found that most students get the activities they practiced throughout the experiment enjoyable. This indicates that students' attitudes toward BL-based reading comprehension were positive. Students who participated in focus group discussion also provided support for this conclusion.

- The experimental group noted several difficulties that impeded them during the intervention, which was the other major finding. Nearly all of the participants listed technological difficulties, connectivity concerns, challenges using digital resources, establishing a balance between in-person and virtual activities, and efficient time management for virtual work as their top hurdles.

In summary, the t-test analyses for independent and paired samples show that BL-based reading considerably improves the experimental group's reading comprehension performance. Examining the students' questionnaire responses and findings from the focus group discussion (FGD) supports this result, as most of them reported significant improvements in their reading comprehension after the experiment.

4.6. Insights Drawn from the Pilot Study

The primary objective of the pilot study was to gather vital insights about the instruments utilized for the main data collection procedures and analyses of the entire research activities. Moreover, it is also a springboard to build upon the results to advance the main study. Consequently, the strengths and drawbacks of the processes before implementation, during training, and throughout the intervention were assessed, and the required modifications will be carried out while collecting data for the main study. As a result, a number of lessons are taken as inputs for the main study, which is intended to produce vital research findings. This led to participation in a range of activities while the intervention was being implemented. For the pilot study, there were multiple activities before pre-intervention data were collected, during experimental group training, and during post-intervention data collection. The lessons learned from the pilot study process are listed below.

i. Before the implementation of the pilot study, the researcher disseminated the tools for the panel of experts to see the content and face validity of the instruments. The experts identified different items that lacked clarity. They also identified repeated items. These items were cancelled before they were distributed to the participants. Similarly, there were vague words that did not have clear meanings for the participants that were deleted later.

ii. The amount of time participants were allowed to complete the pre-posttests' reading comprehension questions was one lesson learned from it. The one-hour allotted time for the pre-posttests was insufficient. They did not finish answering the questions in the time given to them. It took them around one hour and thirty minutes. Therefore, one hour and thirty minutes will be allotted for the main study.

iii. The training material, AAU e-learning training manual for students training manual was used for the training, and it was provided to students before they started the training assuming that they could read it in advance and the researcher thought that two hours (one day) was enough to give training for participants about LMS/Moodle, but it was not enough. Thus, participants of the main study will be trained for four hours (two days).

iv. Once participants had logged into the Moodle/LMS system with the initial password that the ICT office had supplied, participants were urged to change it. Although several students faced challenges when resetting their passwords, the researcher successfully arranged appointments and resolved the matter with those participants with the help of the designated instructor. Besides, the researcher had to contact the university's ICT office to quickly resolve a problem that arose when two pilot study participants (2E and 2K) forgot their changed passwords.

v. Some participants experienced difficulty accessing the Moodle platform during the chat sessions and discussion forums. This could imply that the instruction was not sufficiently provided. As a result, before commencing the main study intervention, students will receive substantial training.

vi. The results of the experimental group showed a statistically significant change; however, the comparison and experimental groups' post-test reading comprehension scores did not differ statistically significantly from one another. This absence of difference could potentially be attributed to the small sample size and short period of intervention; consequently, a larger sample size with a longer period of intervention will be incorporated into the main study, which would result in a stronger statistical difference between the groups.

vii. Following the intervention, participants in the treatment group filled out a questionnaire expressing their opinions on blended learning and the challenges they faced in implementing it to enhance their reading comprehension. Some participants, though, chose not to respond to the open-ended questions.

To sum up, the techniques employed in the pilot study reasonably facilitated the completion of the main study. Disparities identified in the pilot study were addressed during the main study.

CHAPTER FIVE: DATA PRESENTATION, ANALYSIS, AND DISCUSSION OF THE MAIN STUDY RESULTS

5.1. Introduction

As stated in the first chapter, the main objective of the study was to investigate the effects of blended learning on university students' reading comprehension of first-year students at Addis Ababa University's College of Business and Economics. In this chapter, the main study findings are presented, analyzed and discussed.

The analysis of the pre- and posttests intervention data gathered for the main study, which took place between October 28, 2024, and January 15, 2025, is the focus of this section. Pre- and post-tests, questionnaire, and focus group discussions were employed for the data collection instruments. The data gathered using these tools were treated under quantitative and qualitative sections independently. The findings and analysis of the quantitative and qualitative data are presented as follows.

5.2. Analysis of the Quantitative Data

The quantitative data collected from the reading comprehension tests and questionnaires were analyzed using descriptive and inferential statistics. The results and analysis of this data are presented in the following section.

5.2.1. Analysis of the Pretest Results

Prior to begin undertaking the experiment, a reading comprehension test adapted from the TOEFL (2023) was administered to participants in the experimental and control groups. The participants were given 1 hour and 30 minutes to answer the TOEFL reading comprehension questions.

Using the provided TOEFL answer key, the participants' pre-test results were marked, graded, and then analyzed using SPSS version 26 software. The five dependent variables, such as finding the main idea, locating factual information, guessing vocabulary in context, drawing inferences, and identifying references were the focus of the analysis. These variables assessed the

participants' overall reading comprehension abilities in the pre-test. Descriptive statistics and an independent-sample t-test were used to examine the reading comprehension abilities of the experimental and control groups in terms of their total reading comprehension.

Administering the pre-test had two purposes. The first purpose was to establish the baseline reading comprehension levels of the students before the intervention; and the second was to compare the pre-test results with the post-test findings after the experiment to evaluate the effectiveness of the intervention. Therefore, it was important to confirm that the participants in both the experimental and control groups had similar English reading skills before the experiment. This section presents the findings of the pretest results based on the overall reading comprehension measured by the five components. Therefore, the pre-test data were analyzed using descriptive statistics and independent samples t-tests.

Table 15: Results of the Descriptive Statistics and Independent Samples T-tests of Both Groups (Pre-test)

Components	Groups	N	Mean	SD	T-value	Sig.(2-tailed)	Sig. level
Main Idea	Experimental	42	3.000	.382	1.776	.079	Not sig.
	Control	42	2.857	.354			
Factual Information	Experimental	42	7.595	.586	.598	.552	Not sig.
	Control	42	7.523	.505			
Vocabulary	Experimental	42	7.142	.813	.295	.768	Not sig.
	Control	42	7.095	.655			
Inference	Experimental	42	6.714	1.132	-1.672	.098	Not sig.
	Control	42	7.047	.622			
References	Experimental	42	2.285	.457	.000	1.000	Not sig.
	Control	42	2.285	.457			
Overall reading comprehension achievement	Experimental	42	76.458	4.272	-.312	.756	Not sig.
	Control	42	76.734	3.815			

Table 15 above summarizes the comparison of the score of the experimental and control groups in each of the five reading comprehension components. The control group (N=42) had a mean score of 2.857 with a standard deviation (SD) of 0.354 for the main idea, while the experimental group (N=42) obtained a mean score of 3.000 with an SD of 0.382. The t-value in this comparison was 1.776, and 0.079 was the significant value. The significance level is greater than the generally accepted cutoff of 0.05, so this result is not considered statistically significant. This demonstrates that there was not statistically significant difference between the two groups' reading comprehension on finding the main idea.

In terms of factual information, the experimental group scored a mean score of 7.595 with a SD of 0.586, while the control group obtained a mean score of 7.523 with an SD of 0.505. Both the sig. value (0.552) and the t-value (0.598) are greater than the 0.05 cutoff points. This suggests that there was no noticeable difference in finding factual information between the experimental and control groups.

The vocabulary mean score of the experimental group was 7.142 with an SD of 0.813, whereas the mean score for the control group was7.095 with an SD of 0.655. The t-value was 0.295, and the sig. value was 0.768 that significantly exceeds at the $p<.05$ level. These results indicated that there was not statistically significant difference and the two groups' vocabulary levels were comparable.

The experimental group had a mean score of 6.714 with an SD of 1.132 for inferences, while the control group received a mean score of 7.047 with an SD of 0.622. The t-value was -1.672 and the sig. value was 0.098. Based on the sig. value, in terms of making inferences, there was no statistically significant difference between the two groups.

For both the experimental and control groups, the mean scores for identifying references were 2.285, with an SD of 0.457 for each. The t-value was 0.000 while the significance value was 1.000. The absence of a statistically significant difference implies that there was no difference between the two groups in terms of identifying the references.

The mean score of control group was 76.734 with an SD of 3.815 for overall reading comprehension achievement, while the experimental group scored 76.458 with an SD of 4.272.

The t-value was -0.312 and the sig. value were 0.756 that are greater at the p<.05 level. It suggests that there was no meaningful difference between the two groups' total reading comprehension achievement levels.

According to the data in table 15 above, there were no statistically significant differences in any of the five reading comprehension components between the experimental and control groups. The p-values for all components were higher than the usual significance level of 0.05, demonstrating that any observed differences were not statistically significant, even if there were some differences in mean scores. This implies that there was no statistically significant change in reading comprehension between the experimental and control groups before the intervention.

5.2.2. Analysis of Posttest Results

Following a 12-week intervention, post-tests were given to compare the two groups' reading comprehension scores. To answer the specific research objectives 1, 2, and 3, the post-test results were calculated using descriptive statistics, paired-samples t-tests, and independent-samples t-tests. The posttest results for each group were assessed, and the average mean scores for each rubric were computed. After that, an Excel file containing these scores was loaded into SPSS version 26 for analysis. Based on the data gathered, each specific research objectives was analyzed as follows.

Research Objective One

The first specific objective of the study was to examine if there is a statistically significant improvement in students' achievement in the posttest reading comprehension skills of the experimental group. Descriptive statistics and paired sample t-tests were used to analyze the statistically significant differences between the experimental group's post-test and pretest results. Additionally, the effect size was calculated to assess the magnitude of the results.

Table 16: Descriptive Statistics and Paired Samples T-test Results of the Experimental Group (Posttest)

Components	Tests	Mean	SD	T-value	Sig-value	Effect size-d	Significance	Status of the effect

								size
Main Idea	Pretest	3.000	.382	-5.330	.000	0.954	Significant	Large
	Posttest	3.452	.550					
Factual Information	Pretest	7.595	.586	-5.330	.000	0.775	Significant	Large
	Posttest	8.047	.582					
Vocabulary	Pretest	7.142	.813	-6.577	.000	0.980	Significant	Large
	Posttest	7.833	.580					
Inferences	Pretest	6.714	1.132	-5.776	.000	0.782	Significant	Large
	Posttest	7.452	.705					
References	Pretest	2.285	.457	-4.109	.000	0.705	Significant	Large
	Posttest	2.619	.491					
Total Score of the Pretest		76.458	4.272	-15.005	.000	1.865	Significant	Very Large
Total Score of the Posttest		83.929	3.724					

To find out the effect of blended learning in reading on the students reading comprehension achievement, a paired samples t-test was used. Students were tested for their ability for finding the main idea (out of 11.44%), and finding factual information (out of 25.71%) guessing vocabulary (out of 25.71%), making inferences (out of 28.57%), identifying references (out of 8.57%).

After the intervention, the experimental group showed significant improvements in all five components of reading comprehension, as shown in table 16 above. In the experimental group (N = 42), participants' scores for finding the main idea improved from a pretest mean of 3.000 to a posttest mean of 3.452. The corresponding standard deviations (SDs) were 0.550 and 0.382. The t-value of -5.330, with a sig. value of 0.000, indicates a statistically significant improvement. In order to see the magnitude of the improvement, Cohen's d that measures effect size was calculated (d=0.954), indicating that the intervention significantly improved participants' reading comprehension in terms of finding the main ideas.

The experimental group's mean scores for factual information increased from 7.595 on the pretest to 8.047 on the posttest, with SDs of 0.586 and 0.582. Cohen's d with a large effect size of 0.775 at a sig. value of 0.000 and a t-vale of -5.330, suggesting that the intervention had a significant impact on participants' ability to find factual information. Moreover, the vocabulary mean on the pretest was 7.142, and the mean on the posttest increased to 7.833 with SDs of 0.580 and 0.813, respectively. The sig. value was 0.000 and the t- value was -6.577. The result of Cohen's d (d= 0.980) suggested a significant effect size. The results indicated that the intervention had a meaningful impact on enhancing the skill of guessing vocabulary in context of the participants.

The mean scores for making inferences in the experimental group increased from 6.714 on the pretest to 7.452 on the posttest, with SDs of 1.13 on the pretest and 0.705 on the posttest at the point $p<0.05$ level of significance with a large effect size d=0.782. This implies that the intervention significantly improved participants' ability to make inferences from texts.

For identifying references, the mean score increased from 2.285 on the pretest to 2.619 on the posttest, with SDs of 0.457 and 0.491, respectively. The sig. value 0.000, t-value -4.109, and the Cohen's d (d= 0.705) indicated an effect size of a large value, which means that participants had a considerable progress mastering the ability to identify textual references.

There was a significant difference ($p < 0.05$) in the mean pretest score of 76.458 and the average posttest score of 83.929 for the overall reading comprehension scores of the experimental group. As indicated in table 16 above, the analysis yielded a sig. value of 0.000 and a t-value of -15.005. Therefore, Cohen's d (d=1.865) implied a large effect size, highlighting that there was a statistically significant impact of the intervention on reading comprehension. Generally, as proved by the large effect size for the total score, the intervention in the treatment group significantly improved in all the listed reading comprehension components. So, the intervention was successful in improving the overall reading comprehension of participants.

Research Objective Two

The second research objective of this study was to find out if there is a statistically significant improvement in students' achievement in the posttest reading comprehension skills of the control

group. The purpose of this specific research objective was to determine if there was an improvement in the control group's reading comprehension achievement from the pretest to the posttest based on the above reading comprehension components. Descriptive analysis and paired sample t-tests were employed to compare the results of the posttest to the pretest and see any statistically significant differences.

Table 17: Descriptive Statistics and Paired Samples t-test Results of the Control Group (Posttest)

Components	Tests	Mean	SD	T-value	Sig. value	Significance	Effect Size	Status
Main Idea	Pretest	2.857	.354	.628	.534	Not Significant	0.104	Small
	Posttest	2.904	.532					
Factual Information	Pretest	7.523	.505	.684	.498	Not Significant	0.137	Small
	Posttest	7.595	.543					
Vocabulary	Pretest	7.095	.655	-1.851	.071	Not Significant	0.339	medium
	Posttest	7.309	.604					
Inferences	Pretest	7.047	.622	.595	.555	Not Significant	-0.124	Small (-ve) effect
	Posttest	6.976	.517					
references	Pretest	2.285	.457	.000	1.00	Not Significant	0.000	No Effect
	Posttest	2.285	.457					
Total score of the	Pretest	76.734	3.815	-1.995	.053	Not Significant	0.174	Small
Total Score of the	Posttest	77.404	3.891					

As this table indicated, the pretest mean for finding the main idea was 2.857, which increased to 2.904 in the posttest, with SDs of 0.354 and 0.532, respectively. The t- value was .628, and the sig. value was .534. Cohen's d (d=0.104), indicating a small effect size. This shows that the intervention in the control group had only a minor effect on participants' reading comprehension on finding the main ideas.

The pretest mean score for factual information was 7.523, which increased to 7.595 in the posttest, with pretest an SD of 0.505 and posttest an SD of 0.543. Cohen's d (d=0.137) indicates

a small effect size, reflecting that the intervention had a minor positive impact on participants' reading comprehension of finding factual information.

For guessing contextual vocabulary, as indicated in table 17, the comparison group's pretest mean score was 7.095 with an SD of 0.655; however, the posttest score improved to 7.309 with an SD of 0.604. The t- value was -1. 851 and the sig. value was .071. Cohen's d (d= 0.339) reflects a medium effect size, indicating that the intervention in the control group had an impact on vocabulary improvement.

In terms of making inferences, Compared to the pretest mean of 7.047, and the posttest mean of 6.976, there was a slight decrease. The corresponding SDs was 0.517 and 0.622. The t- value was .595, and the sig. value was .555. As the data presented in the table above, a slight negative influence is suggested by the Cohen's d (d= -0.124). This indicates that the participants' ability in the control group to draw inferences from texts has been marginally lowered after the intervention.

The data in table 17 above also revealed that the mean scores for identifying references were 2.285 for both the pretest and posttest, with SDs of 0.457 for each. The t- value was .000, and the sig. value was 1.000. Cohen's d (d= 0.000) indicates no effect, suggesting that the intervention had no impact on participants' comprehension of identifying references.

The control group pretest mean for the overall score was 76.734; the posttest mean was 77.404, with SDs of 3.815 and 3.892, respectively. The t- value was -1.995, and the sig. value was .053. The small effect size reflected by the Cohen's d (d=0.174) suggests that the intervention slightly improved the reading comprehension scores of the participants. In comparison with the other reading comprehension components, the rubric guessing contextual vocabulary showed better results than the others. Generally, reading comprehension was not significantly affected by the conventional face to face intervention.

Research Objective Three

The third research objective of the study was to investigate whether there are statistically significant differences in the overall reading scores of both groups on the posttest in the main

idea, factual information, vocabulary, inferences, and references. It appears logical to assume that any significant discrepancies in their mean scores on the post-test would be caused by the intervention, as the pretest did not reveal any significant differences between the two groups at the beginning of the study. The descriptive and inferential statistics that were calculated for both groups' post-test scores are shown in the table below.

Table 18: Results of the Descriptive Statistics and Independent Samples T-test of Both Groups in terms of Overall Reading Performance (Posttest –Main Study)

Components	Control Group			Experimental Group			.Sig-value	Effect size	Status	Significance
	N	Mean (M)	Standard deviation	N	Mean (M)	Standard deviation				
Main idea	42	2.904	.532	42	3.452	.550	.000	.75	Large	Significant
Factual information	42	7.595	.543	42	8.047	.582	.000	.68	Large	Significant
Vocabulary	42	7.309	.604	42	7.833	.580	.000	.67	Large	Significant
Inferences	42	6.976	.517	42	7.452	.705	.001	.62	Large	Significant
References	42	2.285	.457	42	2.619	.491	.002	.60	Large	Significant
Total score of the posttest	42	77.404	3.891	42	83.929	3.724	.000	.66	Large	Significant

Based on the results of this table, the experimental group scored better than the control group in all components related to blended learning-based reading comprehension.

The mean score of the experimental group (N=42) was M=3.452 with an SD of 0.550, whereas the control group (N=42) scored M= 2.904 with an SD of 0.532 to find the main idea. The experimental group achieved better than the control group, as evidenced by the statistically significant difference between the two groups (sig. = 0.000) with a Cohen's d effect size of 0.75. This indicates that the experimental group's intervention was effective in improving the participants' reading comprehension of finding the main ideas.

As it is illustrated in table 18 above, the experimental group obtained (M= 8.047) on the factual information component, while the control group scored (M=7.595). To investigate the effects of BL on students' reading comprehension, an independent samples t-test was used. The study revealed that there was a statistically significant differences in both groups in terms of the factual information scores at the p<.05 (p =.000) with a Cohen's d effect size of 0.68. Therefore, the experimental group achieved better than the control group by a meaningful margin.

In terms of guessing vocabulary, the experimental group (M=7.833) did better than the control group (M=7.309). The statistically significant difference between the groups, with a significance value (P=.000) and Cohen's d effect size (d=0.67), shows that the intervention in the experimental group was effective in guessing vocabulary in context.

When making inferences, as illustrated in the table above, the experimental group (M=7.452) scored better than the control group (M=6.976). Besides, an independent samples t-test was carried out to examine the impacts of BL on students' reading comprehension in making inferences. As a result, there was a statistically significant difference at the p<.05 (P =.001) with a Cohen's d effect size of 0.62. These findings imply that the intervention in the experimental group considerably improved the participants' capacity for making inferences from texts.

In addition, the experimental group had a mean score of 2.619 for identifying references, compared to the control group's mean score of 2.285. The difference between the two groups was statistically significant difference at the p<.05 (P=0.002) with a Cohen's d effect size of 0.60. This shows that the intervention improved participants' reading comprehension of identifying references.

In summary, the experimental group (M=83.929) scored better than the control group (M=77.404) at the p<.05 level (p=.000) with a Cohen's d effect size of 0.66. This result indicates that the experimental group achieved better than the control group on each of the reading comprehension components, demonstrating that there were statistically significant differences in all components on the posttest.

5.2.3. Analysis of Questionnaire Data

The fourth specific research objective was designed to explore more about the students' attitudes toward blended learning-based reading instruction while participating in the intervention. This research objective was intended to assess the benefits, difficulties, technological effectiveness, sociability, and self-learning that the participants of the experimental groups experienced throughout the intervention.

All members of the experimental group responded to a questionnaire using a 5-point Likert scale on the issues of BL benefits, challenges, technological self-efficacy, sociability, and self-learning in the blended learning environment. Descriptive statistics were thus used to address the specific research objective.

The study assessed the degree of interest the participants had in using technology and participating in BL-based reading comprehension, as well as their attitudes of the advantages and challenges of using the BL in reading activities. The subsequent sub sections provide the replies of the participants as well as an interpretation of the questionnaire items.

5.2.3.1. Benefits of Using Blended Learning in Reading Comprehension

The perceived advantages of using BL in reading classes to enhance students' reading comprehension abilities were gauged by asking them nine questions. They were assessed how much they agreed or disagreed with each statement using a 5-point Likert scale, as shown in the table below.

Table 19: Advantages of Using Blended Learning

	Level of Agreement	Frequency	%
1. Blended learning (BL) enhances my interest to read.	Strongly Disagree	0	0
	Disagree	5	11.90
	Neutral	0	0
	Agree	20	47.62
	Strongly Agree	17	40.48
	Total	42	100
2. I find blended learning more convenient than face to face learning.	Strongly Disagree	0	0
	Disagree	5	11.90
	Neutral	9	21.43

	Agree	15	35.71
	Strongly Agree	13	30.95
	Total	42	99.99
3. BL helps me to think in-depth about my reading comprehension skills.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	3	7.14
	Agree	26	61.91
	Strongly Agree	13	30.95
	Total	42	100
4. I can comprehend the reading materials better because of blended learning.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	7	16.67
	Agree	20	47.62
	Strongly Agree	15	35.71
	Total	42	100
5. Blended learning helps me to do my reading activities more effectively.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.52
	Agree	29	69.05
	Strongly Agree	9	21.43
	Total	42	100
6. It is more efficient to combine online learning with traditional in-class instruction than to use one-way information distribution.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	2	4.76
	Agree	22	52.38
	Strongly Agree	18	42.86
	Total	42	100
7. I feel happy when I take the reading comprehension lessons through blended learning.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.52
	Agree	20	47.62
	Strongly Agree	18	42.86
	Total	42	100
8. A blended learning reading session keeps me focused.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.52
	Agree	22	52.38
	Strongly Agree	16	38.10
	Total	42	100
9. In the future, I would prefer to use BL as one of my learning instructions.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	0	0
	Strongly Agree	24	57.14
	Agree	18	42.86

	Total	42	100

As table 19 illustrates, the data gathered from the questionnaire on the benefits of blended learning indicates a positive response among respondents; BL is viewed as being advantageous in many different ways. As can be seen in item one, respondents' interest in reading is much increased by BL approach. Remarkably, 88.10% of participants strongly agree (40.48%) and agree (47.62%) that using this approach encouraged the students to read more. This indicates that BL can grab and maintain students' attention.

A large majority of the participants (66.66%) indicated that BL offered greater convenience compared to conventional face-to-face education. However, 11.90% disagree and 21.43% were neutral, indicating that convenience may differ based on circumstances and individual preferences. Furthermore, comprehension should be deepened through BL. As item 3 of the above table indicated, 92.86% of participants agree (61.91%) and strongly agree (30.95%) that BL pushed them to reflect more deeply on their reading comprehension abilities. This implies that the importance of BL comes from its ability to promote critical thinking associated with reading. According to 83.33% of participants, blended learning enhanced their comprehension when it comes to reading. Although 16.67% of respondents were neutral in this regard, the majority still believe it helps them comprehend what they are reading.

As seen in item 5 above, BL seems effective for doing reading activities. Respondents felt that BL improves the efficacy of reading activities; strongly agree (21.43%) and agree (69.05%). The wide support for BL approach underscores how significant gains in doing reading assignments can be made. The respondents (90.48%) agreed that integrating conventional and online approaches was an effective strategy. Besides, incorporating multiple strategies is more effective than relying just on one, according to majority (95.24%) of respondents. Regarding BL for reading comprehension lessons, 90.48% of participants were satisfied. The fact that learners were highly satisfied with BL implies that it was not just beneficial but also enjoyable. 90.48% of respondents agreed and strongly agreed that BL sessions facilitated concentration maintenance, keeping them focused on their duties. According to this, BL encourages extended focus while reducing distractions. So, all of the participants (100%) agreed that incorporating BL

into upcoming learning opportunities is their preferred approach. This indicates that the participants had a meaningful inclination to use BL in the future.

In general, the data in table 19 above showed that BL is positively accepted, and benefits of using blended learning in reading comprehension reported by participants include improved comprehension and focus, ease of use, interest, and efficacy. They also expressed high satisfaction and a definite preference for blended learning (BL) in future learning environments.

5.2.3.2. Participants' Technological Self-Efficacy in Using BL

Technological self-efficacy, as defined by Baranowski et al. (1997), is an individual's assessment of his or her capacity to use technology to plan and carry out the actions required to accomplish particular types of performances. The degree to which participants believe they can apply BL is a significant indicator of how well-positioned they are to improve their reading abilities. Participants' self-efficacy in using a BL was examined using five items, and as the following table shows, they were asked to score how much they agreed or disagreed with each statement on a scale from strongly disagree to strongly agree.

Table 20: Technological Self-Efficacy of Participants

	Agreement Level	Frequency	%
1. I prefer attending virtual class sessions more than attending face- to-face sessions.	Strongly Disagree	0	0
	Disagree	7	16.66
	Neutral	6	14.29
	Agree	20	47.62
	Strongly Agree	9	21.43
	Total	42	100
2. Social network applications (e-mail, telegram, instagram, Facebook, Twitter, You Tube and others) help me in developing my reading ability.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.53
	Agree	24	57.14
	Strongly Agree	14	33.33
	Total	42	100
3. BL environment enables me participating to forums and chats with my classmates.	Strongly Disagree	0	0
	Disagree	0	0

	Neutral	6	14.29
	Agree	20	47.62
	Strongly Agree	16	38.09
	Total	42	100
4. I enjoy modern tools and equipment such as (computer, cellphone, internet…etc.) required by blended learning	Strongly Disagree	0	0
	Disagree	4	9.52
	Neutral	5	11.91
	Agree	18	42.86
	Strongly Agree	15	35.71
	Total	42	100
5. My computer proficiency enables me participate in online discussion forums and chats.	Strongly Disagree	0	0
	Disagree	2	4.76
	Neutral	3	7.14
	Agree	24	57.14
	Strongly Agree	13	30.95
	Total	42	99.99

The data presented in table 20 above displayed findings about participants' attitudes and abilities related to using technology in blended learning. The majority of participants stated that they preferred virtual learning than conventional face to face instruction; 69.05% of participants strongly agree (21.43%) and agree (47.62%) that they preferred online learning environments. This choice suggests that there is a tendency for virtual learning settings. Even if many respondents found virtual sessions superior, there was still a wide range of viewpoints, as evidenced by the percentage of respondents who were neutral (14.29%) and disagree (16.66%). As can be seen in table 19, item 6, 95.24% of the participants preferred the BL approach.

The reaction of the participants towards different social networking applications' ability to improve reading skills was positive. Regarding how confidently they felt about using social networking apps (like email, Telegram, Instagram, Facebook, Twitter, YouTube, etc.), 90.47% (agree 57.14%, and strongly agree 33.33%) of participants said that these digital instruments enabled them to develop their reading skills.

Concerning the third item in table 20 above, 85.71% of participants agreed that the blended learning (BL) setting makes it easier for them to participate on discussion boards and online chats with other students. As it is indicated in item 4, this pro-BL tendency is reinforced by the fact that most (78.57%) have good computer skills, which allow them to participate actively in

online chat rooms and discussion forums during reading classes. All things considered, the results indicated that while utilizing BL inside the basis of the reading process, participants displayed elevated degrees of technological self-efficacy.

In addition, 88.09% of the participants agreed that that their computer skills enable them participate to online forums and chats successfully. The degree of confidence on computer literacy revealed by the participants suggested that they were capable to manage basic technological issues in blended learning environment.

To summarize, the results in the table 20 above suggest that participants were positive towards the utilization of technology in BL contexts, and they were good in terms of technological self-efficacy. Besides, a positive attitude was exhibited on utilizing contemporary technological tools, preferring virtual learning, recognizing the benefit of social media to their reading abilities, respecting the collaboration opportunities offered by blended learning, and feeling comfortable participation in online forum discussions.

5.2.3.3. Challenges in Using Blended Learning

The challenges that participants have faced in using a BL were examined using seven questions, and as the following table shows, they were asked to score how much they agreed or disagreed with each statement on a scale from strongly disagree to strongly agree.

Table 21: Participants Challenges in Using Blended Learning

	Agreement Level	Frequency	%
1. Low internet speed and connectivity problems were the challenges with blended learning online resources.	Strongly Disagree	0	0
	Disagree	5	11.90
	Neutral	0	0
	Agree	20	47.62
	Strongly Agree	17	40.48
	Total	42	100
2. I feel troublesome at the very beginning of using the blended learning.	Strongly Disagree	0	0
	Disagree	7	16.67
	Neutral	5	11.90

	Agree	19	45.24
	Strongly Agree	11	26.19
	Total	42	100
3. Blended learning based reading comprehension gives me less knowledge than traditional classroom instruction.	Strongly Disagree	0	0
	Disagree	24	57.14
	Neutral	6	14.29
	Agree	7	16.67
	Strongly Agree	5	11.90
	Total	42	100
4. I find BL difficult to take part in online discussions and forums because of my limited computer expertise.	Strongly Disagree	0	0
	Disagree	22	52.38
	Neutral	4	9.52
	Agree	7	16.67
	Strongly Agree	9	21.43
	Total	42	100
5. BL affects me as a learner to have high-self responsibility and digital literacy.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	7	16.67
	Agree	20	47.62
	Strongly Agree	15	35.71
	Total	42	100
6. I feel confused at the beginning about how to use a BL.	Strongly Disagree	0	0
	Disagree	7	16.67
	Neutral	4	9.52
	Agree	20	47.62
	Strongly Agree	11	26.19
	Total	42	100
7. When using the blending approach to learning, language is an obstacle to me.	Strongly Disagree	0	0
	Disagree	9	21.43
	Neutral	7	16.67
	Agree	17	40.47
	Strongly Agree	9	21.43
	Total	42	100

As indicated in table 21 above, participants explained the challenges faced during the intervention of blended learning. Issues with low internet speed and connectivity were the major sources of difficulties for the participants. According to statement 1, 88.10% of respondents agreed (47.62%) or strongly agreed (40.48%) that slow internet speed and bad connectivity were

challenges that the participants encountered in the blended learning environment. This demonstrates that one of the main barriers to implement BL effectively is internet access-related technical problems.

Regarding items 2 and 6, 71.43% and 73.81% of participants, respectively, reported that they got confused when they first started utilizing the method. On the other hand, 16.67% of participants in both questions stated they had no trouble integrating BL into their reading instruction. As can be seen in item 3 above, 57.14% of respondents had a favorable opinion about the new approach. Most of them did not accept the notion that reading comprehension instruction based on BL provides less knowledge than conventional face to face classroom instruction. This indicates that the majority of participants did not reject BL to be any less effective in disseminating knowledge than conventional approaches.

In response to item 4, 38.10% of participants agreed (16.67%) and strongly agreed (21.42%) that using BL made it challenging for them to participate in online forums and chats due to their lack of computer skills. This indicates that further support or instruction in computer literacy may be necessary. Nonetheless, 52.38% of participants stated that their lack of computer skills did not prevent them from participating.

However, a significant number of (83.33%) of participants agreed that BL requires a high level of self-responsibility and competency with digital technologies. This might demonstrate how students cannot flourish in a mixed learning setting unless they possess self-motivation and prior digital expertise. In addition, item 7 of the above table, a total of 61.90% of participants agreed that language presented as an obstacle to the BL environment. This implies that about two-third of the participants highlighted the need for language assistance that could prevent them for getting benefit from blended learning.

Therefore, students' competency in technology and self-reliance are greatly important in BL environment, which also need to handle technological challenges and offer sufficient assistance for any potential obstacles. In order to raise overall participant satisfaction and the efficacy of blended learning, the results highlighted areas in need of improvement.

5.2.3.4. Sociability in Blended Learning

Tertiary level students can improve their reading abilities when they interact with one another at different reading levels. In this regard, Weaver et al. (2008) argue that the goal of higher education is to foster productive relationships between students and their peers and between students and teachers. Developing innovative, captivating, and superior e-learning environments requires encouraging both learning cooperation and teamwork. To better understand how students felt about BL's friendliness, this study looked into how they perceived it in terms of their reading skills. In accordance with this, six items were created to assess how a BL might help participants interact with one another. On a scale from strongly disagree to strongly agree, they indicated which of the statements they disagreed or agreed with. The results are displayed in the table below.

Table 22: Sociability in the Blended Learning

	Agreement Level	Frequency	%
1. I am satisfied with the quality of interaction between all involved parties (Technology, Teachers, and Students).	Strongly Disagree	0	0
	Disagree	7	16.67
	Neutral	7	16.67
	Agree	17	40.47
	Strongly Agree	11	26.19
	Total	42	100
2. In the blended learning environment, I obtain encouragement and support in my learning experience of reading.	Strongly Disagree	0	0
	Disagree	3	8.70
	Neutral	2	4.35
	Agree	22	52.17
	Strongly Agree	15	34.78
	Total	42	100
3. I am satisfied with my participation in reading because of the new method.	Strongly Disagree	0	0
	Disagree	4	9.52
	Neutral	0	0
	Agree	25	59.52
	Strongly Agree	13	30.95
	Total	42	99.99
4. I do not feel lonely in the blended learning environment.	Strongly Disagree	0	0
	Disagree	2	4.76
	Neutral	2	4.76
	Agree	22	52.38
	Strongly Agree	16	38.10

	Total	42	100
5. I am satisfied with the way I interact with other students.	Strongly Disagree	0	0
	Disagree	2	4.76
	Neutral	4	9.52
	Agree	25	59.52
	Strongly Agree	11	26.19
	Total	42	99.99
6. There are more opportunities to collaborate with others in a blended Course.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	2	4.76
	Agree	27	64.29
	Strongly Agree	13	30.95
	Total	42	100

A degree of satisfaction was expressed by participants on the quality of the interactions among students, teachers, and technology. The percentage of participants who strongly agree and agree that they were happy with these interactions is 66.66%. A total of 33.34% participants disagreed or neutral, indicating that there might be room for improvement or individual differences in experience even though 66.66% of participants were satisfied.

As for the second item, BL environments worked quite well at offering encouragement and support. A total of 86.95% of participants confirmed that the blended learning environment was crucial in helping them feel supported and encouraged in their BL reading. They received the necessary support and encouragement for their learning experiences. This data revealed that participants got encouragement and support through BL approach.

In terms of item 3 above, participants confirmed that the new approach the reading activities were enjoyable. More than 90% of participants agreed that they felt the BL approach improved their involvement with reading activities. Their positive response indicates that the blended learning approach could promote their level of reading engagement. Additionally, there is a noticeable lack of loneliness among participants. The majority of participants, 90.48%, either strongly agreed or agreed that they did not feel alone in the BL environment. This shows that the BL approach could be effective in fostering a sense of belonging and lowering feelings of loneliness.

As presented in item 5 above, interactions between students in the BL environment were also widely recognized. Of the participants, 85.71% agreed that they were satisfied with their relationships with classmates. This might illustrate that the BL approach has a positive impact on the dynamics sociability. Moreover, regarding item 6, the majority of participants believed that there was a significant possibility for teamwork with blended learning. A total of 95.24% of participants agreed that there were more opportunities to collaborate with others. This demonstrates how students believe they have many opportunities to work together with their classmates in blended learning contexts.

As shown in the above table, the responses indicate that most participants had a positive attitude about BL environment. Participants confirmed that it is effective to provide opportunities for collaborative learning, reduce feelings of loneliness, and support encouraging learning environments, and these factors contribute to ensuring that students had engaging and enjoyable educational experiences.

5.2.3.5. Self- Learning in Blended Learning

Creating self-regulated or independent learning is one argument in favor of implementing a blended learning approach. To better understand the students' perceptions of BL on self-learning, six questions were prepared, and as the following table shows, they were asked to score how much they agreed or disagreed with each statement on a scale from strongly disagree to strongly agree.

Table 23: Self- Learning in the Blended Learning Environment

	Agreement Level	Frequency	%
1. Blended learning encourages me to take responsibility for my own learning.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.52
	Agree	22	52.38
	Strongly Agree	16	38.10
	Total	42	100
2. BL provides me to decide where I read.	Strongly Disagree	0	0
	Disagree	2	4.76
	Neutral	3	7.14

	Agree	24	57.14
	Strongly Agree	13	30.95
	Total	42	99.99
3. Blended learning helps me become self- educated.	Strongly Disagree	0	0
	Disagree	2	4.76
	Neutral	5	11.90
	Agree	18	42. 86
	Strongly Agree	17	40.48
	Total	42	100
4. Blended learning helps me to feel confident.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	5	11.90
	Agree	26	61.90
	Strongly Agree	11	26.19
	Total	42	99.99
5. I allocate extra reading time for my BL based reading activities.	Strongly Disagree	0	0
	Disagree	3	7.14
	Neutral	4	9.52
	Agree	20	47.62
	Strongly Agree	15	35.71
	Total	42	99.99
6. BL enables me to learn at my own pace.	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	4	9.52
	Agree	29	69.05
	Strongly Agree	9	21.43
	Total	42	100

The table above illustrates how participants perceived their autonomy and responsibility in self-learning of the blended learning environment. Analysis and interpretation of the responses are presented as follows:

According to the majority of participants (90.48%), BL method encouraged them to take responsibility for their own learning. As item 1 in the table above indicated, a total of 90.48% of participants either agreed (52.38%) or strongly agreed (38.1%) with this assertion. This may show that BL is an effective method for promoting students' feelings of personal accountability.

Having the flexibility to choose where to read is one of the benefits of BL approach. In the table above, 88.09% of participants believed that BL gave them the freedom to choose where to read.

This demonstrates that BL provides the participants had an opportunity to choose their study environment, and they had a positive attitude towards the flexibility of the approach. In addition, 83.34% of participants accepted that the approach supported them to be self-regulated learner. This implies that BL plays an important role in stimulating autonomous learning and self-regulated educational progress.

As it is shown in item 4 of the above table, 88.09% of participants confirmed that the BL approach helped them to feel confident towards their learning. This illustrates that BL had an impact for increasing students' confidence in addition to their academic progress.

As participants highlighted, BL helped them to set extra reading time based on their own pace. As item 5 indicated, 83.33% of participants agreed that they allocated additional reading time for activities. This might suggest that students were open for allocating extra time to their reading activities because of the approach. Besides, a total of 90.48% of participants stated that BL enabled them to learn based on their own pace. This indicates that flexibility, one of the key benefits of BL, accommodates different learning styles and paces.

In general, based on the data collected through the questionnaire, substantial percentages of agreement are found for every statement in the data, which consistently show positive attitudes toward blended learning. Therefore, the core components of blended learning that were revealed by the participants are the capacity to successfully incorporate technology, grant students flexibility and independence, and establish dynamic and cooperative learning settings. Even with the notable drawbacks caused by technological problems and the need for self-control, it usually boosts participants' self-esteem and ability to study on their own.

5.3. Analysis of the Qualitative Data

The open-ended and focus group discussion questions were designed to support the quantitative data. Thus, analysis and interpretations of the qualitative data are presented below.

5. 3.1. Analysis of Open-ended Questions

There were three open-ended questions presented in the questionnaire. The purpose of these questions was to obtain the participants' opinions regarding the advantages and difficulties of implementing BL-based reading comprehension during the intervention. They were also asked to respond to a question regarding how they thought the approach should be applied in the future. In other words, an assessment was carried out to determine the advantages and difficulties of using BL for students' reading comprehension as well as any potential recommendations for using the approach to help them improve their reading comprehension in the future. As a result, in order to assess the attitudes of participants in the experimental group toward the blended learning method, the data gathered through open-ended questions and focus group discussions were qualitatively coded and analyzed as follows:.

5.3.1.1. The Advantages of BL in Improving Reading Comprehension

Regarding the question, "What advantages did using BL bring to your learning process in reading comprehension?" Majority of the respondents emphasized how much BL stimulates their interest in reading. One of the respondents revealed, *"Blended learning made my reading becomes enjoyable and stimulating when different technological components incorporated into it."* In addition, using BL had significantly improved the students' learning experience in reading comprehension. As another respondent also mentioned, *"I am more engaged and focused, and the process is more fun because the method has increased my participation."*

Instant feedback was also another significant benefit. Respondents stated that using BL tools helped them understand things better and reinforced their reading comprehension skills because they get immediate feedback during online discussion forums and chats. As one respondent put it, *"The incorporation of chats and discussion forums helped me to remember the information,"* this in turn would improve retention.

One key advantage that the majority of participants mentioned was flexibility, which enables participants to access information whenever and wherever it suits their schedules. One of the respondents said, *"... I arranged my reading into my schedule because I can access the reading materials anytime, anywhere."* A relevant and personalized learning experience is guaranteed by

the personalized content that is based on learning styles and preferences. Another respondent also stated, *"I like that BL platforms provide personalized content according to my interests and learning style."*

Additionally, BL facilitates engaging discussions with classmates by creating possibilities for collaborative learning. As mentioned by one respondent, "*BL helps sharing knowledge, which allows me to participate in group discussions which help our understanding of the reading passage and its activities."*

Respondents also emphasized how BL has a favorable effect on the growth of digital literacy abilities. Beyond the immediate topic, respondents acknowledged that one important benefit of utilizing BL is that they acquire skills that are relevant to the digital world. Regarding this, another participant said, *"BL helped me become more comfortable with technology and improves my computer skills so I used it for education instead of wasting time on unnecessary things."*

This suggests that BL not only improves reading comprehension but also gives students the tools they need to successfully navigate the digital world, and use the platform for educational purposes. Generally, as expressed by the respondents, the many advantages of BL improve engagement, personalization, feedback, retention, flexibility, collaboration, accessibility, and interest throughout the reading comprehension learning process.

5.3.1.2. Challenges Participants Encountered Using BL in Reading Classes

Integrating BL into the reading comprehension process has been useful, but some students struggled. As one respondent describes it, *"Technical and connectivity problems were the problems I faced in using the software in my reading comprehension process, which made me feel frustrated at the beginning."* Some respondents expressed that they struggled to navigate the software with ease at first and described adaptation to the BL interface as a change of experience that affected their overall comfort level. As another respondent expressed, *"It was hard for me to understand how to make the features work and understand the BL interface*." Some of the other respondents mentioned that they cannot cope with learning difficulties due to the use of digital resources and platforms in blended learning; they have problems with the balance of online educational environments, the collection and transfer of activities, and

adaptation to new technologies. That might show why it is important to guide and support those students who lack technology literacy to make them comfortable interacting with the digital parts of their reading.

The other common theme among the responses was the struggle to manage their time. Many participants struggled to balance the demands of online and in-person portions of blended learning. This includes self-managing online learning activities, meeting due dates, and balancing multiple responsibilities. According to one respondent, *"It was difficult to synchronize the timelines of online activities with the offline counterparts within the blended learning contexts*." Another respondent said, *"Having good time management skills was important in order to keep up with deadlines and balance many things at once."* Some of the respondents were also concerned about the limited face-to-face communication between students themselves in the blended learning system. Stressing the importance of the interactive and collaborative aspects of learning, some students stated that they were hoping for more opportunities for direct engagement with their peers and instructors. For example, a respondent mentioned this issue: "*I need more face-to-face classroom interaction with my classmates and instructor that the blended learning approach gives me…"* This indicates that no matter how broad the online component may be in terms of its flexibility, these blended learning programs need to preserve a sense of face-to-face interaction.

To sum up, the respondents struggle a lot with blended learning due to various challenges like technology issues, a learning curve with digital tools, time management, and desire for live interaction. To tackle these challenges, a holistic approach involving technology infrastructure, training programs, communication approaches, and organized efforts to foster a sense of sociability within the blended learning environment may be required.

5.3.1.3. Participants' Recommendations on Using BL for Learning Reading in the Future

For the question, *"What do you recommend in using blended learning (BL) in your learning of reading skills?"* respondents expressed their opinions. As one respondent noted, e-books and multimedia content, along with interactive internet content, are potentially more engaging and

immersive reading experiences. More responses were in favor of individualized learning paths. The adaptive technologies also facilitate the customization of exercises and information to accommodate different learning styles, which one of the respondents argued is one of the key prerequisites for effective reading skill development.

To use BL effectively, it is important to provide frequent assessment and immediate feedback. In this sense, one respondent noted, "Timely feedback allows students to understand what their strengths and gaps are, and assessments are critical to determine reading ability." Respondents modeled these as fundamental recommendations: online discussion forums, group projects, peer engagement, and collaborative learning opportunities were important suggestions.

In addition, the respondents highlighted the importance of clear communication and guidance between instructors and students for the success of BL with respect to reading skills. They emphasized the importance of a clear set of norms for online discussions, known guidelines for accessing and using digital reading resources, and transparent expectations. They had also agreed that a prudent approach was the most important. One participant made the suggestion: "*Reading skill development activities on materials, and not limited to traditional reading but also digital, must be provided holistically."*

There was also mention of the use of technologies specifically designed to expand reading possibilities; the list of suggestions ranged from audiobooks to language-learning apps. Respondents also suggested ways to facilitate building digital literacy skills. Another respondent said: *"Training and workshop sessions and instructions can be carried out, which can make the students able to access the online platforms and the technology successfully for reading skill development."* Therefore, the recommendations exemplify the different ways to best leverage BL for literacy skills, including tech use, individualized instruction, collaboration, and a hybrid approach.

In brief, the identified themes included cooperation, engagement, assessment, personalization, clear communication, and thoughtful & equitable use of technology. All these features provide a blended learning environment for improving reading comprehension of students.

5.3.2. Analysis of the Focus Group Discussion

The purpose of the focus group discussion (FGD) was to supplement the questionnaire designed to investigate students' attitudes regarding BL-based reading comprehension. The FGD contained six discussion question guidelines organized under three subtopics: benefits, challenges, and recommendations about the BL method. Eight first-year students from the treatment group participated in the Focus Group Discussions. These students were selected using the systematic random sampling technique from each section in the experimental groups.

There was enough time given for participants to reflect their opinion on the six discussion issues. Audio recordings of the discussions were made. After that, a verbatim transcription of the audio recording was carried out. The researcher looked through the transcriptions multiple times in order to comprehend and arrange the data. The collected qualitative data was entered and analyzed using the N-Vivo 10 program.

The FGD data was thematically analyzed in accordance with its characteristics. Following the coding procedures, the FGD textual data underwent selective and open coding in grounded theory. The FGD data initially contained 22 nodes. As a result, axial coding was employed following the 22 open codes. Based on the codes' relationships and similarities, benefits, challenges, and suggestions about the BL method were the three codes that were found. The FGD data analysis and discussion were done based on these three themes. The detailed coding and classification processes are shown in the table that follows.

Table 24: Participants' FGD Data Codes

Open/Initial Coding	***Axial Coding***
Promote interaction	**Benefits of blended learning**
Availability of variety of resources	Increase focus and understanding
Not bounded by time and place	Enhance students' interest
Enhance students' interest	Promote interaction
Increase focus and understanding	Promotes reading comprehension
Balance of the two approaches	Enhances independent learning
Better internet access	Reading engagement
Retention	Accommodate different learning styles
Promotes reading comprehension	Retention

Low internet speed	Availability of variety of resources
Connection problem	Enjoyable
Difficult at the beginning of the program	Not bounded by time and place
Problems in time management	**Challenges of using BL**
Forgetting username and password	Connection problem
Lack of technological skills	Low internet speed
Improving technological infrastructure	Lack of technological skills
Providing enough workshop and training	Forgetting username and password
Improve time management	Problems in time management
Enjoyable	Difficult at the beginning of the program
Reading engagement	**Suggestions on using BL in the future**
Accommodate different learning styles	Balance of the two approaches
Enhances independent learning	Better internet access
	Improving technological infrastructure
	Providing enough workshop and training
	Improve time management

5.3.2.1. Advantages of Blended Learning for Improving Reading Skills

After the BL-based reading comprehension experiment was over, eight FGD participants engaged to discuss the advantages of BL using the following three questions as a guide:

1. Do you think that the blended approach helped you with your reading comprehension? Why or why not?
2. What were the advantages you obtained from BL-based reading comprehension?
3. What did you like the most about BL?

In the focus group discussion results, participants were talking about their feeling towards blended learning based reading comprehension. Participants highlighted the flexible aspect of the BL approach, with positive impact of integrating traditional in-person teaching with digital material on the understanding of reading content. One participant (P4) expressed, *"I believe the blended method, which combined traditional and internet resources, had improved my reading comprehension. The online materials allowed me to interact with varieties of content, and I could get clarification on any questions during the face-to-face class."* Others mentioned how easily accessible online resources were, enabling them to review the content on their schedule

and improving understanding and retention. Most of Participants believed that the mixed method provided a broad reading exposure which took into consideration different learning preference and styles. Several participants mentioned other benefits of this blended learning strategy, especially with regards to reading comprehension. Participants consistently identified flexibility as a recurring theme, noting that a feature they found especially appealing in reading resources was the ability to access them anytime and anywhere. One participant (P2) said;

> *I think online material access was very flexible and changed my learning. Since it has improved my understanding and given me the freedom to review the reading materials whenever it was convenient for me. Of course, a variety of resources like interactive forums, chats, and quizzes—as well as e-books, Google Docs, and other documents helped me to develop my reading comprehension.*

Moreover, the focus group participants stated a range of favorable opinions about blended learning (BL), emphasizing its diverse value. Digital resources were highlighted for their accessibility and convenience, which allowed readers to connect with the content on their timetables. *"Having the opportunity to read at my own pace was great; it gave me ownership of my learning process,"* said one participant, encapsulating this feeling. Positive and pleasurable learning experiences were also attributed to the collaborative options provided by BL, like group projects and online conversations. Regarding this, another discussant highlighted*, "... I liked the teamwork part. Reading and watching the texts and videos online and then discussing them in class opened my eyes to new ideas, improved my understanding, and stimulated my critical thinking."* Personalized learning experiences were also appreciated by participants since online platforms could adjust to each student's level of capability, allowing exercises and content to be tailored accordingly. Multi-media modality provided access to several types of resources that appeal to different types of learners and was noted to be beneficial.

Based on the focus group discussion, participants had an overall positive attitude towards blended learning (BL). The benefits of BL essentially were the opportunity to collaborate (other people's input), the digital resources available (the advantages of technology) and the ability to learn at their pace. Participants also concurred that the creatively integrated use of both traditional and digital resources positively impacted their reading comprehension. By merging

the benefits of BL with effectively customized learning journeys and diverse multimedia resources, a rich and enjoyable learning environment was designed. Participant (7) had this to say:

> *On discussion forums and chat we were sharing ideas on matters concerning reading on line. That made it easy for me to express my thoughts. I wanted to make online and offline together which I found quite fascinating. Reading at my own pace was also awesome because it gave me a lot of control over my education. It enables freedom of speech and enables us to communicate regardless of when or where we are.*

In general, discussion participants acknowledged the diverse appeal of this pedagogical approach; not only the broad interest in new pedagogical options and activities, but the range of opinions concerning BL noted in the analysis of participant preferences, perceptions of the influence of BL on reading comprehension, and analyses of the benefits of BL.

5.3.2.2. The Challenges of Using BL in Reading Classes

In addition to the benefits of the BL approach in reading, participants discussed identifying the main obstacles encountered during the BL-based reading comprehension experiment with the following guiding questions.

1. What were the challenges you observed from this type of learning?
2. What did you find the most challenging about a blended-based reading lesson?

Participants were asked about the most difficult things they faced during the BL based reading instruction intervention. Managing the lesson's online and offline components was brought up by one of the discussion participants (P7). She said, *"It was difficult to maintain a balance between the traditional and digital resources. Our tendency to feel as though we were managing a lot of things at once was stressful."* Regarding the technological element, another participant (P5) gave his viewpoint, saying,

> *The technical problems were a big obstacle for me. We encountered challenges during the blended reading courses, including connectivity issues and internet speed even, ehhh... I forgot my password in the middle, and also I saw some students who did not*

have enough computer skills so these were some of the difficulties we faced during the program.

In addition, participants had an informative discussion about the difficulties associated with BL reading instruction. The technical challenges faced by certain students, which include problems with internet connectivity and utilizing online platforms, became a repeated issue. The majority discussants (P1, P2, P4, P7, and P8) expressed difficulties adjusting to new technologies and mentioned the learning curve that comes with using digital tools. The inability of participants to balance the demands of the online and offline components resulted in issues meeting deadlines and handling various obligations, which raised the issue of time management as another major concern. According to discussants (P3, P6, and P8), managing both traditional and digital resources, resolving technical problems, keeping students engaged online, and maybe losing one-on-one attention were the most difficult parts of blended-based reading classes.

5.3.2.3. Participants' Suggestions on Using BL in the Process of Learning Reading Skills for the Future

To address the guiding question: How might you suggest incorporating blended learning into helping develop reading skills strategies that can improve blended learning experience to cope with the mentioned barriers? This involved infrastructure technology, training in the use of technology, and communications channels. *"Offering detailed guidance on the digital resources utilized in blended learning can have a major impact because students could adjust more readily if they were given clear instructions and tutorials,"* said another participant (P3). The other participants (i.e., P1, P6, P7, and P8) reported improving time management by setting realistic deadlines for the activities or helping students with difficulties.

Participants' opinions on the potential use of blended learning in the future exchanged as the discussion progressed. Despite some issues that needed to be fixed, most participants (P2, P3, P4, P5, P7, and P8) indicated that they were willing to continue within this learning paradigm moving forward, as it may have benefits. The flexibility and accessibility of blended learning were outlined as major arguments for using blended learning in future academic projects.

In a nutshell, the focus group discussion highlights the basic type of challenges experienced in blended learning reading classes. These challenges included technological challenges, the learning curve of digital tools, and difficulty in time management and social contact. Dealing with these challenges, by all participants, provided useful suggestions that highlighted the importance of creating initiatives within the networks, extensive training, infrastructure and strong communication. All in all, they made it clear that they want to learn more about the potential of blended learning—and as long as the challenges they had identified were worked through and the process of learning overall is improved.

Responses from open-ended questions and focus point group discussions were synthesized and indicated that participants expressed overwhelmingly positive attitudes toward blended learning (BL). They especially appreciated how easy and accessible digital resources were, allowing them to engage with reading materials on their own time. A repeating theme was autonomy participants had over their own learning journeys. The collaboration opportunities provided through BL, like online discussion forums, group efforts, were also praised.

Additionally, the focus group discussion revealed that BL had a positive effect on reading comprehension, the different approaches to the blend, accessibility to online resources, and the convenience of accessing learning resources at any time and any location. BL was commended for its personalized learning experiences and adaptive platforms that adjust content based on individual proficiency levels, further emphasizing the multifaceted appeal of BL in contributing to a positive and effective learning environment**.**

5.4.Discussions on the Results of the Study

To examine the four basic research objectives of the study, 84 first-year students took part, 42 of whom were placed in the experimental group and 42 in the comparison group. To investigate these research objectives, the study used pre-post reading comprehension tests, questionnaire, and focus group discussions (FGDs) conducted before and after the intervention. Data analysis incorporated both descriptive and inferential statistical methods. Descriptive statistics included measures such as standard deviation, mean, frequency, and percentage, while inferential statistics encompassed the paired samples t-test, independent samples t-test, Alpha reliability analysis, and

Cohen’s d. The quantitative data was analyzed using SPSS Version 26, whereas using NVivo 10 software, the qualitative data was analyzed.

In terms of the overall reading comprehension components, the pretest results revealed no statistically significant differences between the control and experimental groups. Despite a small increase in the control groups' mean pretest reading comprehension scores, the results of the independent samples t-test indicated that there were no statistically significant changes (see Table 15).

However, the first specific research objective was designed to examine whether participants in the experimental group showed improvements in the overall reading comprehension components, finding main ideas, locating factual information, guessing vocabulary in context, making inferences, and recognizing references, by comparing the posttest scores with pretest scores. The results showed that there was a statistically significant improvement in the experimental group's mean scores for these reading comprehension components. As to the paired samples t-test results, these improvements had a large effect size and were statistically significant (see Table 16). This shows that reading comprehension intervention based on blended learning significantly improved participants' reading abilities in each of the above components. The study’s results also align with previous research indicating that blended learning enhances reading comprehension (Kheirzadeh & Birgani, 2018; Roomy & Alhawsawi, 2019; Yudhana, 2021; Behjat et al., 2012), confirming that blended learning positively impacts reading comprehension as supported by this study.

The experimental study conducted by Kheirzadeh and Birgani (2018) approved that the reading comprehension of first year Iranian EFL students was positively impacted by blended learning, and they responded favorably to it . In addition, according to Yudhana (2021), the English reading proficiency of Thai EFL undergraduate students significantly improved as a result of blended learning. An experimental study was also conducted by Behjat et al. (2012) to determine if traditional or blended learning environments were more effective in improving EFL learners' reading comprehension. The results demonstrated that incorporating technology into traditional classroom instruction could enhance students' comprehension skills in reading. According to the Ghazizadeh and Fatemipour (2017) experimental study, the experimental group, which had

blended learning (traditional classroom instruction and online learning) method, showed a statistically significant gain in reading competency between the pretest and posttest. The findings of this study also indicated that the reading performance of the experimental group changed significantly from the pretest to the posttest.

The second research objective was intended to find out whether participants in the control group experienced improvements in their overall reading comprehension components between their pretest and posttest results. Although there was a slight increase in the control group's mean scores for reading comprehension, the paired samples t-test results were not statistically significant and revealed a small effect size. This indicates that, in comparison to BL approaches, traditional face to face reading instruction did not significantly improve participants' reading comprehension. As a result, the control group did not show a statistically significant difference in their overall reading comprehension.

The results of this study, as presented in Table 17, demonstrated that traditional face-to-face reading instruction did not significantly improve students' overall reading comprehension across the five components. In contrast, BL-based reading comprehension was more effective, and paired sample t-test results showed that the experimental group scored significantly higher. Other previous research studies supported the findings of this study that found BL can significantly improve reading comprehension among students. BL that combines online and in-person instruction improved reading skills (Karkour, 2014). In addition, according to Owston & York (2018), this approach integrates the advantageous features of both face-to-face education and adaptable online learning environments to offer university students access to both.

The third research objective was also designed to investigate whether there are statistically significant differences in the overall reading scores of both groups on their overall reading score on the posttest regarding finding the main idea, locating factual information, determining meaning through contexts, drawing inferences, and identifying references. The difference between the two groups was statistically significant at the $p<.05$ in the intervention group as compared to the control group, with a large magnitude of effect (Cohen's d). The average mean scores demonstrated that the experimental group achieved better than the control group across all the five measured components significantly.

As indicated in Table 18 above, the findings of the current study is consistent with previous findings that the reading comprehension scores of the treatment group were statistically significant. The effect of a blended learning method, for example, on the reading comprehension of Iranian EFL students was investigated by Kheirzadeh and Birgani (2018). They found evidence to corroborate the main outcome of the current study, namely that blended learning improved EFL students' reading comprehension. Besides, Al-Jarf (2007) conducted experimental research on the effects of blended learning on college students and found that there was a significant difference in reading competency between the experimental and control groups on posttest results. The findings suggested that the experimental group's increased reading comprehension was a direct result of its integration, demonstrating the effectiveness of online education in improving students' English reading abilities.

Furthermore, the post-test mean scores this study revealed that the experimental group scored better than the comparison group, showing a statistically significant improvement in the participants' reading comprehension abilities made possible by the blended learning approach. This result is in line with previous research conducted in the context of English language education by Ghazizadeh & Fatemipour (2017), Behjat et al. (2012), and Alnoori & Obaid (2017) that also demonstrated noteworthy improvements in reading comprehension using the blended learning method. Before the intervention, the two groups' reading comprehension abilities were not statistically significant. On the other hand, following the intervention, the experimental group demonstrated statistically significant changes in all assessed components. These results also substantiated with previous researches conducted by Yudhana (2021) and Kheirzadeh & Birgani (2018), which confirmed significant differences in reading comprehension between treatment and comparison groups following the blended learning interventions. The present study supports these findings, with significantly higher mean scores in the experimental group post-treatment compared with the comparison group. This is an example of the use of blended learning, whereby in-person and virtual instruction are integrated to create maximum flexibility for learners to remain engaged.

Moreover, research from Bataineh (2017) and Kim (2014) that illustrates higher advancement by students in blended learning settings over their counterparts who received traditional face to face instruction supports the findings of the current study. In addition, Szymaska & Kaczmarek

(2011) and Verezub & Wang (2008) studied classes using a mix of printed and online texts in blended courses and found significant improvements in reading comprehension and retention. These studies support the notion that blended learning positively affects reading comprehension.

Initially, there was no statistically significant difference between the groups in this study; nevertheless, following the intervention, the blended learning approach led to statistically significant improvements in the experimental group, thus supporting the alternative hypothesis of this study. This means that teachers should think about blended learning as a useful approach to meet students' diversified needs and improve their students' reading comprehension.

As indicated in table 15, the baseline reading comprehension skills of the two groups were comparable, as seen by the beginning mean pretest. However, the experimental group's mean scores significantly increased in comparison to the control group following a 12-weeks intervention. This improvement within the experimental group was shown to be significant based on statistical analysis that included mean scores, paired samples t-test, independent samples t-test, and effect size calculations. The reading comprehension scores of students receiving blended learning-based instruction and those receiving traditional face to face instruction showed statistically significant differences. Therefore, the null hypothesis was rejected. Thus, the study suggested that integrating traditional face to face instruction with online materials or exercises considerably improves university EFL students' reading comprehension results. So, the blended learning approach could get credit for the improvement.

The fourth research objective of the study was carried out to assess the participants' attitudes regarding the integration of blended learning in their reading classes. The advantages of using blended learning for reading comprehension, the participants' technological self-efficacy in utilizing the BL, the challenges they encountered during the intervention, their sociability on the platform, and the function of BL in fostering self-learning were examined after the intervention. According to the experimental group's participants, BL raised students' level of interest and involvement in their reading assignments.

In the questionnaire and FGD, the majority of participants also stated that BL was a helpful tool for enhancing their reading comprehension abilities. As regards to blended learning's practicality,

flexibility, self-learning, and sociability, participants generally had positive opinions of it. Concerning participants' perspectives toward blended learning integration in enhancing reading skills, the findings (Vance, 2012; Rovai & Jordan, 2004; Asadzadeh et al., 2010) generally align with the findings of the current study. According to these researches, students appreciated the flexibility and accessibility of the online setting but were eager to meet in person for additional academic support; as a result, they favored blended learning over traditional classroom instruction (Senn, 2008; Vance, 2012). However, during this study's intervention, participants in the experimental group noted that internet speed and connectivity were major drawbacks.

In order to verify the data obtained from the questionnaire, the FGD qualitative data were grouped into themes for analysis. The FGD data was examined thematically in light of its characteristics. The FGD data underwent selective and open coding in grounded theory after the coding methods. There were initially 22 nodes in the FGD data. Axial coding was employed subsequent to the 22 open codes, as three primary themes emerged. The three themes that were raised were advantages, difficulties, and recommendations on the BL approach based on the relationships and similarities between the codes. These three themes served as the basis for the analysis and discussion of the FGD data. The first theme outlined the purpose of blended learning, and it was well-received by all participants, as it allowed them to be flexible, accessible, and engage in social interactions to enhance their overall reading comprehension performance. In addition, the majority of participants reported that blended learning enabled them to openly express their thoughts. As they reported, the BL method enabled them to express their thoughts during the chats and discussion forums sessions, which increased their interest. These were the primary reasons they mentioned during the FGD session, along with the BL method's flexibility for reading at their own pace.

The majority of participants stated that BL enables them to actively connect with their readings while engaging in conversations with others. These activities allowed them to build close relationships with their friends outside of the classroom. In line with the FGD responses, the participants in the open-ended questions claimed that BL provided benefits like instant feedback in online chats and discussion forums, as well as increased engagement, improved reading comprehension, access to reading materials at any time and place, and interest in reading.

Another concern was brought up by the participants' suggestion to use BL in their reading classes going forward. The key to successfully implementing the strategy, according to them, was collaboration, participation, feedback, personalization, communication, and a deliberate and equitable use of technology. Additionally, they stated that combining the traditional approach with online learning could benefit both teachers and students in terms of better teaching and developing reading abilities. At the beginning of the intervention, nevertheless, the participants expressed concern about how BL might advance their reading abilities. They did, however, compliment BL for its assistance in helping them advance their reading abilities. These claims also were supported by the outcomes of the FGDs.

CHAPTER SIX: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1. Introduction

The general objective of the study was to investigate the effect of BL on university students reading comprehension of first year students of College of Business and Economics at Addis Ababa University. Pre- and post-tests, questionnaire, and focus group discussions were used to gather data for the study and analyzed and interpreted using descriptive and inferential statistics. This chapter comprises three sections: summary of the findings, conclusions, and recommendations. In the first section, the procedures employed in this study, as well as the major findings gained, are discussed. The study's conclusions are made in the second section. On the basis of the findings and conclusions, recommendations are provided in the third section.

6.2. Summary of Major Findings

Reading comprehension instruction involves a number of steps, one of which is the planning and preparation of instructional materials. Thus, reading comprehension rubrics were adopted, developed, and then categorized the reading activities from Communicative English Skills I (CES-I) according to these rubrics (finding the main idea, locating factual information, guessing vocabulary meaning in context, drawing inferences, and identifying references) before modifying the teaching materials used in the pilot and the main study from the original course material. This is due to the fact that these components are the main emphasis of the majority of the reading comprehension activities in the course module. After that, the reading passages and their activities were converted into the Moodle/LMS platform. The control and experimental groups were given a pretest prior to begin the experiment to see if there was a statistically significant difference between their overall performance in reading comprehension regarding main idea, factual information, vocabulary, inferences, and references between the two groups. Following the administration of the pretests, participants in the experimental group had two days of e-learning platform training. Reading comprehension rubrics were used to organize and calculate the students' reading comprehension score both before and after the experiment, based on the pre- and posttest results of the pilot study as well as the main study.

Additionally, the comparison group received conventional face to face instruction and, most of the time, whole-class teacher-centered instruction. Accordingly, the control group's students read on their own and occasionally with desk partners before sharing their responses with the class. However, the BL approach was used to teach the experimental group. The same course material served as the basis for both groups' lessons, which covered similar objectives for learning. Both groups received instruction from the same teacher. Nonetheless, BL procedures were given to the experimental group.

To put it in another way, participants in the experimental group received instruction utilizing the BL approach for a total of 6 weeks in the pilot study and 12 weeks in the main study. However, the conventional face-to-face method was used for the control group. To determine if BL-based reading comprehension had statistically significant effects on students' reading comprehension performance, posttests were given to both groups following the interventions. Additionally, participants in the experimental group completed a questionnaire regarding their opinions of BL-based reading comprehension after completing the posttests. Furthermore, using systematic random sampling technique, five for the pilot study and eight for the main study participated in focus group discussions.

Generally, data collected through pre-posttests, questionnaire, and FGDs were aimed to achieve the following research objectives: (1) Examine if there is a statistically significant improvement in students' achievement in the posttest reading comprehension skills of the experimental group. (2) Find out if there is a statistically significant improvement in students' achievement in the posttest reading comprehension skills of the control group; (3) Investigate whether there are statistically significant differences in the overall reading scores of both groups on the posttest in the main idea, factual information, vocabulary, inferences, and references; and (4) Assess the students' attitude to reading instruction using a blended learning approach following the intervention. In line with the specific research objectives stated above, the following research hypotheses were also formulated.

Ho: There is no statistically significant difference in reading comprehension scores between students who receive instruction through blended learning (BL) and those who receive instruction through conventional methods. (Null Hypothesis)

H1: There is a statistically significant difference in reading comprehension scores between students who receive instruction through blended learning (BL) and those who receive instruction through conventional methods. (Alternative Hypothesis)

Data were gathered and examined in accordance with the above-mentioned research objectives and hypotheses. Based on statistical analyses, it was shown that the experimental group, which received instruction using the blended learning (BL) method, achieved better in overall reading comprehension on the post-test than the control group, which received instruction using a conventional method. Furthermore, for each reading comprehension component (finding the main idea, locating factual information, guessing vocabulary meaning in context, drawing inferences, and identifying references) on the post-test, the experimental group was found to have significantly outperformed the control group. Additionally, it was shown that the majority of the experimental group's students had a positive attitude towards BL.

An important finding of this research is that overall reading skills were statistically significantly improved in the experimental group (taught using the blended learning method) compared to the control group (taught using the traditional method). With regard to the five distinct elements (main idea, factual information, vocabulary, inferences, and references) associated with reading comprehension ability, it was found that BL was significantly more successful in teaching and learning reading comprehension than the traditional face to face approach. The main study's reading comprehension post-test results showed that the experimental group outperformed the control group in all reading comprehension components, with statistically significant differences (see Table 18).

This indicates that participants in the experimental group achieved better in English reading comprehension test than the control group due to the BL approach. The approach of blended learning (BL) could be the explanation behind the experimental group students' superior reading comprehension achievement. This is because the mixed learning approach encouraged the students in the experimental group to actively participate in reading activities with chat rooms and discussion forums of the target language, as the students who participated in the experimental group reported during the questionnaire and focus group discussions (FGDs) sessions. All things considered, it can be said that the results of the current study in improving

students' reading comprehension skills was made possible by the blended learning approach. Blended learning is thus considered to be useful in improving students' reading comprehension skills.

Students in the experimental group outperformed those in the control group at the end of the intervention, even though there was no noticeable difference in the students' reading proficiency at the very beginning of the intervention. Consequently, the study's findings confirmed that there is a statistically significant difference between the experimental group's and the control group's mean reading posttest scores, with the experimental group's scores being higher. With regard to overall mean score, the experimental group achieved better than the control group, obtaining M= 83.929 (SD = 3.724) as opposed to M= 77.404 (SD = 3.891). With a t-value of 7.850 and a significance level of 0.000, there were statistically significant differences between the two groups. This finding indicates that the intervention had a statistically significant positive effect, as the experimental group outperformed the control group on all reading comprehension components (see Table 18). Accordingly, the null hypothesis (Ho) was rejected, whereas the alternative hypothesis (H_1) was accepted.

The other purpose of the study was to determine how the experimental group students felt about BL after completing their reading comprehension lessons with this approach. To verify this, data from the experimental group were collected through a questionnaire and FGDs. Forty-two students responded to the questionnaire, and eight students participated in the focus group discussions. The results showed that the majority of students felt positively about the BL strategy that was employed in their reading comprehension classes during the intervention. However, they mentioned internet speed and connectivity as the primary problems during the FGDs and questionnaire.

In brief, the main findings gathered from the data collection instruments that have been covered so far are presented below.

i. The results of the statistical analysis of the paired samples test in the posttest showed that the students in the experimental groups improved their reading performance in all components at the point $p<0.05$ level of significance with a

large effect size d=1.865 (see Table 16). This implies that blended learning-based reading comprehension in the context of teaching and learning reading skills could improve students' reading comprehension ability. This is substantiated by the questionnaire and qualitative analysis of students' focus group discussions and open ended questions.

ii. Pre and posttest results were the core data used in this study. A t-test (paired samples t-test) was used to compare the average scores of the control group pre and posttests. The results of the paired samples t-test showed that there was no statistically significant difference within the control group between pre and posttests at a $p<0.05$ level of significance with a small effect size d=0.174 (see Table 17).

iii. The third research objective of this study was to investigate whether there were any statistically significant differences between the control and experimental groups of first-year Addis Ababa University students reading comprehension skills at the social science stream. Therefore, before the commencement of treatment, the researcher had to ascertain whether the students' reading comprehension performances differed in any way in terms of the main idea, factual information, vocabulary, inferences, and references. It was discovered that the pretests did not significantly differ between the two groups of cases. Thus, an independent samples t-test was used for additional analysis of the posttests from both groups. The posttest results of the experimental group showed that there was a statistically significant difference over the posttest results of the control group with a large effect size in terms of all reading comprehension components (see table 18).

iv. In addition, to supplement the results of the posttest of the experimental group, data were also collected through questionnaire and FGDs. The results showed that the majority of students responded positively about the blended learning-based reading comprehension intervention. In other words, students in the treatment group were asked to complete a questionnaire designed to ascertain their opinions about blended learning-based reading comprehension. Based on the results, most students found the BL activities they practiced during the experiment enjoyable.

This indicates that in the context of reading lessons, students' attitudes of blended learning-based reading comprehension were positive. This finding was further supported by the views expressed by students in focus group discussions.

To summarize, the independent and paired samples t-test analyses demonstrate that the experimental group's reading comprehension score improved when they were exposed to blended learning. This suggests that using blended learning in the context of reading can benefit students in improving their reading comprehension skills. Consequently, the alternative hypothesis (H1) was shown to be true, and the null hypothesis (Ho) was rejected based on the findings of the analysis of the pre- and posttests. The analysis of the students' questionnaire and focus group discussions responses also confirmed this conclusion. As a result, the majority of students stressed that they had noticed improvements in their reading abilities after the intervention of blended learning-based reading comprehension.

6.3. Conclusions

The researcher believes that there has been a long history of dissatisfaction with teaching and learning English reading skills. Reading comprehension appears to be a hardship for many students, as numerous students informed the researcher of this study during the FGD session and when he was teaching the courses on reading skills and communicative English skills prior to conducting this study. An inadequate teaching strategy (such as a teacher-centered approach—a traditional face-to-face method) could be one of the contributing factors. To address issues with low engagement in reading activities and poor reading comprehension, implementing blended learning could be an effective approach.

Blended learning (BL) combines face-to-face and online instruction, recognizing that there is no ‘one-size -fits-all’ method of teaching and learning. This research aimed to investigate the impact of BL on university students' reading comprehension. By fostering an engaging environment, BL encourages active participation in reading activities, ultimately enhancing students' reading skills. In this study, the BL approach was applied in the CES-I reading class to assess its effects on students’ reading comprehension abilities and their attitudes toward this approach.

The findings of this research demonstrated that integrating blended learning (BL) into reading instruction can assist students in ways that they will find advantageous. This is due to the fact that BL increases students' opportunities to understand the target language and promotes self-learning, making it seem like a workable approach to improving their reading comprehension skills. It can, therefore, increase students' interest in their learning and responsibility to put in a lot of effort in their reading classes, making it a helpful learning and teaching approach.

As evidenced by the data analysis from the reading comprehension post-test, students in both groups demonstrated improvement in their reading skills. However, compared to the control group, the experimental group's mean score is greater. These findings suggest that blended learning is more effective than traditional methods for enhancing the reading comprehension of first year university students. More specifically, the study's findings supported the idea that blended learning might be one of the appropriate instructional approaches for EFL students to develop their abilities to read and comprehend reading materials.

According to the study's findings, encouraging EFL students to participate in reading activities can be accomplished through the blended learning platform. This indicates that during the intervention, students in the experimental group significantly participated in reading activities more than students in the traditional face to face class. In light of this, it is confirmed that BL fosters active engagement in reading tasks, which can aid learners in understanding reading passages. It was also revealed that students collaborate with one another in BL settings to optimize their own and one another's learning. In contrast to traditional classroom instruction, BL increases the number of online resource options available, which promotes interpersonal connection and provides opportunities in a more flexible setting regardless of time or location. Besides, based on the findings of questionnaire and FGDs, the majority of the students in the experimental group demonstrated favorable attitudes toward blended learning (BL). As a result, on the basis of the findings of this study, the following conclusions were drawn:

i. There was a statistically significant difference within the experimental group's overall reading performance with a considerable effect size. Students were engaged with the blended learning approach and collaborated with online forums and chat sessions on each activity given on the LMS/Moodle platform. This could

help to improve the students' reading comprehension achievement during the posttest.

ii. A comparison of the experimental and control groups' pre- and post-test results revealed that while conventional face to face approach typically improved students' reading comprehension, its effect on students' total reading comprehension performance was less pronounced. Consequently, there was no statistically significant improvement in their reading comprehension scores on the posttest.

iii. There was a statistically significant difference with a considerable effect size in the overall reading comprehension between the experimental and control groups. An independent samples t-test was used to compare the two groups' posttest results, and it showed that there was a statistically significant improvement in the reading comprehension ability of the participants in the experimental group.

iv. This study also examined students' attitudes toward blended learning-based reading comprehension. Participants reacted positively to blended learning-based reading comprehension, proving that combining traditional face to face instruction with online technology improved students' reading comprehension. Because of the blended learning approach, students valued having more freedom in selecting where and when to read.

As stated earlier, the study's findings support the use of BL in reading comprehension. However, it is impossible to predict whether BL will always be advantageous. Thus, the conclusion of this study marked the beginning of an investigation into the impact of BL on the reading comprehension skills of university learners in an ELT context.

6.4. Recommendations

This quasi-experimental study was conducted at Addis Ababa University freshman students in the social science stream to examine the potential effects of blended learning on students' reading comprehension and their attitudes toward it. EFL teachers, researchers, curriculum and syllabus designers, English language teaching materials writers, and concerned institutions should consider the following recommendations based on the findings of this study: In light of this, this

section discusses the pedagogical uses of blended learning (BL) for teaching reading comprehension and offers suggestions for further research.

6.4.1. Implications of BL for Reading Comprehension Instruction

i. This study shows that teaching reading skills using a blended learning approach is more effective than a face-to-face traditional method. Thus, to enhance students' English language reading comprehension abilities in Ethiopian higher education institutions, English language teachers should implement the blended learning (BL) approach.

ii. English language teachers should get theoretical and practical training on the application of key BL method features before integrating the approach into EFL reading sessions. This is because EFL teachers need access to professional development, including blended learning theory and philosophy, demonstrations of technology enabled learning techniques, and continuous guidance and support from subject matter specialists to use the blended learning strategy. Stated differently, there are situations where putting a new teaching technique into practice can be challenging. Thus, it is recommended that researchers, educators, and teachers work together, exchange ideas, plan courses, and provide mutual support for maximizing the efficacy of the BL method.

iii. The study's pedagogical implications suggest that Ethiopian higher education institutions teach English reading abilities to students by utilizing a variety of blended learning strategies. This is because the approach allows students to participate in an environment that is not limited by space or time. Thus, to prevent teaching and learning from becoming monotonous, English language teachers should incorporate the blended learning method into their regular lessons. They should also add a variety of resources to cater to the various learning styles of their students.

iv. Considering that blended learning (BL) has been shown to be successful in teaching and learning reading abilities, the researcher does not advocate for having the students' entire instruction take place online. Therefore, it should be understood that while online learning can supplement conventional face to face instruction in an EFL classroom when necessary, it cannot entirely replace it. To put it another way,

depending on the type of activities, students are required to be able to cooperate, compete, and work alone.

v. When EFL teachers apply the BL approach for the first time, it is recommended that students use the minimum virtual learning combinations possible. In other words, the "best" approach is to select a suitable mix of modalities (online and conventional) for instruction based on the teacher's beliefs about learning-teaching, the student preferences, and the activities that seem to work best when combined with the BL approach. Before permitting students to engage in blended learning (BL) in reading comprehension classes, it is essential that they acquire training and workshop in BL and the e-learning platform skills they will need to utilize.

Generally, the findings of the study shed light on the domains of instructional technology and English language reading instruction. Enhancing EFL reading classes with blended learning-based reading comprehension can help students achieve better across the board. Although the blended learning method has been shown to be beneficial, implementing it irresponsibly might hinder the learning process. Therefore, EFL teachers should carefully consider how to incorporate blended learning into their courses.

6.4.2. Recommendations for Further Research

The results of this study suggest that additional investigation is required to assess the effects of blended learning-based reading comprehension under various conditions in order to support or oppose the results of this study. Therefore, the following suggestions should be taken into account by future researchers.

1. Although the study reveals some encouraging results, there are certain limitations that need to be acknowledged before the findings can be applied broadly. The study's sample size, which was limited to 84 participants who were given the control and experimental groups, is the source of the first drawback. To further test its hypothesis, larger sample sizes and longer study durations could provide more robust evidence of the intervention's impact. Furthermore, the results cannot be generalized to all years and disciplines because they were based on samples of

AAU first-year students in the social science stream. Consequently, to provide more generalization at the national level, future research should be carried out with second, third, etc. year students as well as with students from different universities and departments.

2. More research should be done to determine whether the blended learning approach is more beneficial for teaching and learning English as a foreign language in the areas of listening, speaking, writing, grammar, and vocabulary.
3. Further research on the impact of the blended learning (BL) approach on EFL teachers' and students' attitudes with regard to improving reading comprehension and their motivation to learn English as a foreign language should be carried out.
4. Further investigation on the effectiveness of teaching and learning English as a foreign language (EFL) to primary and secondary school students through blended learning (BL) should be done.

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APPENDICES

Appendix A: Experts' Panel for Content and Face Validity of Instruments

Reviewer 1
Assistant Professor, Dept. of English Language and Literature
Kotebe University of Education
About 18 years of English Language Teaching experience at Dire Dawa, Wulkitie, Ambo and Kotebe universities

Reviewer 2
Assistant Professor, Dept. of English Language and Literature
Debreberhan University
About 20 years of English Language teaching experience at Ambo and Debreberhan Universities

Reviewer 3
Associate professor, Department of English Language and Literature
Kotebe University of Education
Close to 20 years of English Language Teaching experience at Addis Ababa Science and Technology University and Kotebe University of Education

Reviewer 4
Assistant professor, Department of English Language and Literature
Kotebe University of Education
About 15 years of English Language teaching experience at Kotebe, Wolaita Sodo and Debreberhan Universities

Expert Comments on the Instruments' Content and Face Validity

Dear Reviewers,

Currently, I am verifying the face and content validity of the tools I will be using to gather data for my doctoral research in ELT. An Investigation of the Effects of Blended Learning on Students' Reading Achievement at Addis Ababa University is the theme of my dissertation. I am grateful that you agreed to be a member of my panel of professionals to help us assess the tools' face and content validity.

For your convenience in providing feedback on the items created for the instruments, we've created the form (attached). Please be free to remark while reviewing the suggested things using the following standards:

Face validity: Whether an instrument "looks like" it accurately measures what it is designed to measure.

Validity of the content: Do the items reflect ideas connected to the topic of the research?

Clarity: Does each instrument's component make sense? Are the terminology and language appropriate?

Other: Feel free to add any other ideas that seem appropriate.

Dear Reviewers, the study's participants will be first-year AAU students pursuing the course Communicative English Skills I. The tools will primarily gather information about how blended learning affects students' reading performance, their attitudes toward reading comprehension based on blended learning, and the difficulties they run into while doing so. To assess the success of blended learning-based reading comprehension instruction, tests will be administered both before and after the treatment. Participants from both groups (23 students from the treatment group and 22 students from the control group) will complete the background survey once the pre-test has been administered.

Following the course of treatment, those in the experimental group will respond to a questionnaire designed to gauge their attitudes toward reading comprehension based on blended learning and the difficulties they encountered. The last phase will be to choose five students from the treatment group for the FGD in order to triangulate the information obtained from the questionnaires.

If you have any questions or comments, please email me via dagnutsegaye@gmail.com or

Call me @ +251 9118 77413.

Thank you in advance for your great help!

Sincerely,

Dagnachew Tsegaye

Content and Face Validation Form for Questionnaire Items

For Participants who get the Communicative English Skills I course at AAU, questionnaire items are designed to investigate background knowledge, attitudes towards blended learning-based reading comprehension, and difficulties encountered during the process. The questionnaire will be used to gather information about the personal characteristics of the students as well as their experiences with blended learning-based reading comprehension. In particular, the questions aim to investigate participants': (1) background knowledge regarding blended learning-based reading comprehension; (2) attitude regarding the advantages of blended learning; (3) self-efficacy, sociability, and independent learning in a blended learning environment; and (4) difficulties students face while utilizing the program.

Instructions: Please give a rating to each item according to the following two criteria: (1) whether the statement accurately represents the goals of the research; and (2) whether the statement's meaning is clear. Please mark your response with a tick (√).

1. Is the statement suitable?

Yes= suitable No = Not Suitable

2. Is the statement clear?

Yes= clear No = not clear.

Please rewrite the item in the comment box beneath if it is suitable but unclear, and write "Delete" in the comment box to indicate which item(s) should be removed from the questionnaire if they are unsuitable or unclear.

S. No	**Items/Statements**	**Appropriateness**		**Clarity**		
	Benefits of Using Blended Learning	**Yes**	**No**	**Yes**	**No**	**Comments**
1	Blended learning enhances my motivation and interest to read.					
2	Blended learning helps me to carry out my reading activities more effectively.					
3	I am in favor of adopting BL to enhance reading comprehension.					
4	BL helps me to think in-depth about my reading comprehension skills.					
5	I can comprehend the reading materials better because of blended learning.					
6	I find blended learning more convenient than face to face learning.					
7	It is more efficient to combine online learning with traditional in-class instruction than to use one-way information distribution.					
8	I feel happy when I take the reading comprehension lessons through blended learning.					
9	A blended learning reading session keeps me always focused.					
10	In the future, I would prefer to use BL as one of my learning strategies.					
	Technology Self Efficacy					
11	I prefer attending virtual class sessions more than attending face- to-face sessions.					

12	Social network applications (e-mail, telegram, instagram, Facebook, Twitter, You Tube and others) help me in developing my reading ability.					
13	BL environment enables me participating to forums and chats with my classmates.					
14	I enjoy modern tools and equipment such as (computer, cellphone, internet…etc.) required by blended learning					
15	The videos uploaded to the Moodle platform were interesting.					
16	BL gave me the opportunity to improve my reading comprehension though discussion forums.					
	Challenges Using BL					
17	Low internet speed and connectivity problems were the challenges to reach difficulties with blended learning online resources.					
18	I feel troublesome at the very beginning of using the blended learning.					
19	Blended learning based reading comprehension gives me less knowledge than traditional classroom instruction.					
20	I found that Technological skills were challenging when using BL.					
21	I feel confused at the beginning about how to use a BL.					
	Sociability in BL					
22	I am satisfied with the quality of interaction between all involved parties (Technology, Teachers, and Students).					
23	I am satisfied with the way I interact with other students.					

24	I am satisfied with my participation in reading because of the new method.					
25	I do not feel lonely in the blended learning environment.					
26	In the blended learning environment, I obtain encouragement and support in my learning experience of reading.					
27	There are more opportunities to collaborate with others in a blended Course.					
	Self-Learning in BL					
28	Blended learning encourages me to take responsibility for my own learning.					
29	BL provides me to decide where I read.					
30	Blended learning helps me become self-educated.					
31	Blended learning helps me to feel confident.					
32	I allocate extra reading time for my BL based reading activities.					
33	BL enables me to learn at my own pace.					

Generalcomments_____
_____
_____
_____
_____

I deeply appreciate your cooperation!

Appendix B: Data Gathering Tools

Appendix B1: Students` Demographic Information Questionnaire for the Control Group

Addis Ababa University

College of Education and Language Studies

Department of Foreign Languages and Literature

General Direction: Dear students, I am currently pursuing a PhD at Addis Ababa University in the Department of Foreign Languages and Literature. I am conducting a research study titled **"The Effects of Blended Learning on Students' Reading Comprehension".** As a result, I kindly strive for your assistance in finishing the survey instruments I have attached.

There is no correct or incorrect response. Your task is to indicate your personal feelings and experiences regarding each item. I assure you that the data that you provide will be used solely for the study purposes. Your response will remain anonymous, and your participation in this research is completely voluntary. By completing this survey, you are providing informed consent to participate in the study.

Please indicate the potential option for you with a **(√)** mark.

1. Gender: Male ☐ Female ☐

2. Age: 17 to 20 ☐ 21 to 24 ☐ 25 and above ☐

I deeply appreciate your contribution for the success of my study!

Appendix B2: Students` Demographic Information Questionnaire for the Experimental Group

General Direction: Dear students, I am currently pursuing a PhD at Addis Ababa University in the Department of Foreign Languages and Literature. I am conducting a research study titled **"The Effects of Blended Learning on Students' Reading Comprehension"**. As a result, I kindly strive for your assistance in finishing the survey instruments I have attached.

There is no correct or incorrect response. Your task is to indicate your personal feelings and experiences regarding each item. I assure you that the data that you provide will be used solely for the study purposes. Your response will remain anonymous, and your participation in this research is completely voluntary. By completing this survey, you are providing informed consent to participate in the study.

Please indicate the potential option for you with a **(√)** mark.

I. Background Information

1. Gender: Male ☐ Female ☐

2. Age: 17 to 20 ☐ 21 to 24 ☐ 25 and above ☐

3. Do you have personal computer or smartphone?

A. Yes ☐ B. No ☐

4. How can you describe your skill of using a computer or Smartphone?

Poor ☐ Moderate ☐ Good ☐ Excellent ☐

5. How much experience do you have using social media like Google Docs (Drive), Facebook, YouTube, Twitter, email, telegram, Instagram, tiktok etc. for academic purposes?

None ☐ less than a year ☐ one to two years ☐ more than two years ☐

6. Which social media do you regularly use for academic purposes?

Google Docs (Drive) ☐ Facebook ☐ YouTube ☐ Twitter
Telegram ☐ email ☐ others, please specify_____

I deeply appreciate your contribution for the success of my study!

Appendix B3: Students' Attitudes Questionnaire for the <u>Experimental group</u>

Addis Ababa University

College of Education and Language Studies

Department of Foreign Languages and Literature

Dear students,

This questionnaire is designed to assess your Attitude towards the benefits and challenges of Blended learning based reading comprehension. Therefore, through this questionnaire, the researcher wants to find out how you think, feel and behave when working in a blended learning environment. Use your experience from the blended learning based reading comprehension class to answer the statements. Your contribution in completing this questionnaire is greatly appreciated.

Thank you for your cooperation!

Instruction: Different statements are listed to the left of the following table, and five potential response scales are given to the right in the following order: Strongly Disagree **(SD)**, Disagree (**DA),** Undecided **(UD),** Agree **(A)**, and Strongly Agree **(SA)**. Take a moment to read each of the blended learning method-related things in the left column of the table below. Then, for each of the statements, put **a tick (√) mark** next to the answer scale that most accurately reflects your thoughts and feelings about that particular statement.

<u>NB</u>: You do not have to write your name.

S. No.	Items/Statements Benefits of Using Blended Learning	1. Strongly Disagree	2. Disagree	3.Undecided	4. Agree	5. Strongly Agree
1	Blended learning (BL) enhances my interest to read.					
2	I find blended learning more convenient than face to face learning.					
3	BL helps me to think in-depth about my reading comprehension skills.					
4	I can comprehend the reading materials better because of blended learning.					
5	Blended learning helps me to do my reading activities more effectively.					
6	It is more efficient to combine online learning with traditional in-class instruction than to use one-way information distribution.					
7	I feel happy when I take the reading comprehension lessons					

	through blended learning.					
8	A blended learning reading session keeps me focused.					
9	In the future, I would prefer to use BL as one of my learning instructions.					
	Technology Self Efficacy					
10	I prefer attending virtual class sessions more than attending face-to-face sessions.					
11	Social network applications (e-mail, telegram, instagram, Facebook, Twitter, You Tube and others) help me in developing my reading ability.					
12	BL environment enables me participating to forums and chats with my classmates.					
13	I enjoy modern tools and equipment such as (computer, cellphone, internet…etc.) required by blended learning					
14	My computer proficiency enables me participate in online discussion forums and chats.					
	Challenges Using BL					
15	Low internet speed and connectivity problems were the challenges with blended learning online resources.					
16	I feel troublesome at the very beginning of using the blended learning.					
17	Blended learning approach gives me less reading comprehension opportunity than traditional classroom instruction.					
18	I find BL difficult to take part in online discussions and forums because of my limited computer expertise.					
19	BL affects me as a learner to have high-self responsibility and digital literacy.					
20	I feel confused at the beginning about how to use a BL.					
21	When using the blending approach to learning, language is an obstacle to me.					
	Sociability in BL					
22	I am satisfied with the quality of interaction between all involved					

	parties (Technology, Teachers, and Students).					
23	In the blended learning environment, I obtain encouragement and support in my learning experience of reading.					
24	I am satisfied with my participation in reading because of the new method.					
25	I do not feel lonely in the blended learning environment.					
26	I am satisfied with the way I interact with other students.					
27	There are more opportunities to collaborate with others in a blended Course.					
	Self-Learning in BL					
28	Blended learning encourages me to take responsibility for my own learning.					
29	BL provides me to decide where I read.					
30	Blended learning helps me become self- educated.					
31	Blended learning helps me to feel confident.					
32	I allocate extra reading time for my BL based reading activities.					
33	BL enables me to learn at my own pace.					

Open-Ended Questions
Please write your answers to the following questions in the space provided.

1. What benefits does using BL bring to your learning process in reading comprehension?

_____
_____

2. What difficulties do you encounter when using BL in your learning process?

_____
_____

3. What do you recommend in using BL in your learning of reading skills?

_____
_____
_____

Adapted from: Tang and Chaw (2013) and Abu & Shaath (2012)

Appendix B4: Focus Group Discussion Questions for the Treatment Group

1. Do you think that the blended approach helped you with your reading comprehension? Why or why not?
2. What were the advantages you obtained from BL-based reading comprehension?
3. What did you like the most about BL?
4. What did you find most difficult or challenging about a blended-based reading lesson?
5. What were the challenges you observed from this type of learning?
6. What do you recommend in using blended learning (BL) in your learning of reading skills?

Appendix C: Reading Comprehension Course Plan for the Two Groups

Group	Time	Room and Block	Remark
Control	Wednesday : 8:30-10:10 am Monday: 1:30-2:20 pm	R- 29 (Old Building)	
Experimental	Tuesday : 8:30-10:10 am Wednesday 1:30-2:20 pm	R-29 (OB)	Online lessons are used in Wednesday's class.

Addis Ababa University
College of Education and Language Studies

Department of Foreign Languages and Literature

Course Description

This course is mainly designed for first-year students. This is a non-credit course that is designed for research purposes and adapted from Communicative English Language Skills I. The actual course provides three contact hours per week and includes the four major language skills, grammar, and vocabulary. However, reading passages and their activities are selected for the purpose of this research. This non-credit course is designed to prepare students to enhance their reading comprehension performance under the reading skill components of finding the main idea, finding factual information, determining the meaning of vocabulary in the context, drawing inferences, and identifying references. The ultimate goal of this course is to prepare students to read and comprehend what they have been reading during their time at university effectively.

Objectives

Upon completing this course, learners will be able to:

- ✓ Identify the different purposes of reading comprehension.
- ✓ Read and identify main ideas in a reading text.
- ✓ Guess the meanings of new words from context.
- ✓ Read a text and answer comprehension questions.
- ✓ Attempt the pre-reading, while reading and post reading questions.

Required Texts and Online Materials

Grellet, F. (1981) Developing Reading Skills: A practical guide to reading comprehension exercises. Cambridge: Cambridge University Press.

Nuttall, C. (2005). *Teaching Reading Skills in a Foreign Language* (2nd ed.). Oxford:Macmillan.

Shea, M., and Nancy R. (2016). FIVES Strategy for Reading Comprehension. USA: Learning Sciences International.

Course Requirement and Evaluation

Required Assignments

Students have to check the syllabus for the assignments weekly. There will be three main assignments during the semester. All assignments must be submitted on due dates as indicated in the syllabus.

Attendance

Class attendance during the class is obligatory. The attendance sheet is prepared**.**

Participation Policy

I expect all the students to come to class on time and prepare well for class reading and homework. Students are expected to participate effectively and collaboratively in-class and online during chat and forum discussions and activities.

Updating the Syllabus

The syllabus is tentative and it could be changed to meet the student's needs and desires. Changes and updates will be discussed in the classroom.

The schedule for the six weeks of the pilot study

Weeks	**Teaching Pedagogy**	**Groups**	
		Experimental	**Control**
One and Two	Introducing the purpose of the study and Participants signing consent form	√	√
	Background survey	√	√
	Pretest	√	√
	Exploring LMS/Moodle through training	√	
Three and Four	**Introducing the course syllabus**	√	√
	Introduction	√	√
	Reading for Study	√	√
	Purposes for reading	√	√
	Pre-reading, while reading and post reading activities	√	√
Five	Health and Fitness		
	Activities (reference, vocabulary questions)	√	√
	Reading: The Awramba Community	√	√
	Pre-reading, while reading and post reading activities	√	√
Six	Post-test	√	√
	Questionnaire	√	
	FGD	√	

Appendix D: Participants' Consent Agreement and Information Sheet

Appendix D1: Instructor's Consent Agreement Form

1. A Note to the Trainee Instructor

Dear Instructor Trainee:

Firstly, I am interested in expressing my gratitude for your willingness to take time and energy, as this will be crucial to the study's effective completion. This training is an effort to exchange concepts regarding the blended learning (BL) approach. The effective implementation of the method in the reading classes will come from the trainee instructor's honest follow-up of the training.

Following the training, two sections of first-year students enrolled in the "Communicative English Skills I" course—which has been chosen as a sample for the current study—will be under your instruction. Please make an honest effort to attend the training on time in order to ensure that the method is implemented correctly. The instruction manual will be provided to you for use during class and as an additional reference during the session.

It is important for you to understand that the training manual you are reading is based on the AAU e-learning teacher training manual, which was created in January 2020 by the Learning Teaching Technologies Team (http://elearning.aau.edu.et). It is therefore anticipated that the BL strategy, which is based on this handbook, will be used in the reading class with ease and success in order to accomplish the desired goal.

Thank you for your cooperation!

2. The training agreement form

Before commencing the blended learning approach training in reading lessons, please fill out this form.

Address of the instructor trainee

Name: _____ Address:_____

Phone no: _____ E-mail: _____

Trainer's Address

Name: _____ Address:_____

Phone Number: _____ E-mail: _____

The training will be offered from _____ to _____. As a teacher trainee, I have participated in every training session the researcher has provided on the e-learning method. I certify that I have received the instruction, and I am fully willing to use the strategy in BL-based reading classes throughout the study. I will also adhere to all the protocols that I am required to follow.

Trainee's Sign _____ Date _____

Trainer's Sign _____ Date ___ _____

Appendix D2: Participants' Information Sheet for the Experimental Group

Research Title: ***Investigating the Effects of Blended Learning on Students reading comprehension Achievement at AAU***

Dear participants,

I am Dagnachew Tsegaye, a PhD candidate at Addis Ababa University, Department of English Language and Literature. Under the guidance of Dr. Girma Gezahegn, I am now working on a PhD study that examines how blended learning affects students' reading comprehension performance.

I would like to invite you to participate in the above-mentioned research title. You must read this and comprehend the purpose and scope of the research. If you are interested in taking part, you will be required to put your signature on the consent form.

The impact of BL on students' reading comprehension, your attitudes on BL-based reading comprehension, and the advantages and difficulties you have faced when using BL are the areas that can be covered in this study. You will get technical training if you take part in this study. In an online setting, you will also have the chance to practice reading in English outside of the classroom, which could aid in the improvement of your reading comprehension performance. Furthermore, you will get the chance to communicate with your teacher and classmates virtually, and you might even get valuable feedback on what you read.

The research will run for six weeks, and once you agreed to take part, you will need to:

-Complete the background questionnaire.
- Take the pretest.
- Attend lectures outside of the classroom or in the institution.
- Use the LMS platform to engage in virtual learning activities with your classmates.
- Take the post-test.
- complete a questionnaire on your attitudes toward adopting BL-based reading comprehension, as well as the advantages and difficulties you faced during the process.
- Take part in a 40-minute focus group conversation (for selected students).

Your name and all related data will be kept private, along with all of the data you submit. Your name will be changed and anonymized before being shared with anybody else; all the information will be anonymized, not even my thesis supervisory panel. Following the completion of the time frame for collecting data, any data that could be utilized for recognizing participants will be removed and erased. It will not be stored for longer than is necessary. A password protection mechanism will be used to store raw data. The anonymized information will be utilized exclusively for scholarly investigations and disseminated through conferences, scholarly journals, and other academic works. You will have the opportunity to review the audio recordings of the discussions in the focus group and the final report outcome. You will also be able to comment on and remove any information and items that you are not interested in me incorporating in the finalized report. You will also be able to raise questions regarding the study and get adequate responses.

Your decision to participate in my research is completely up to you. I absolutely respect your choice if you choose not to take part. You are free to leave my research at any point without penalty, and any information gathered will be erased if you decide after enrolling to change your

mind. Additionally, if you have any upcoming tests for your face-to-face courses, you can take a break from working online.

Kindly get in touch with me if you need any more inquiries:

Name: Dagnachew Tsegaye
Email: dagnutsegaye@gmail.com
Tel: +251911877413

You can get in touch with my advisor if you have any questions or issues.

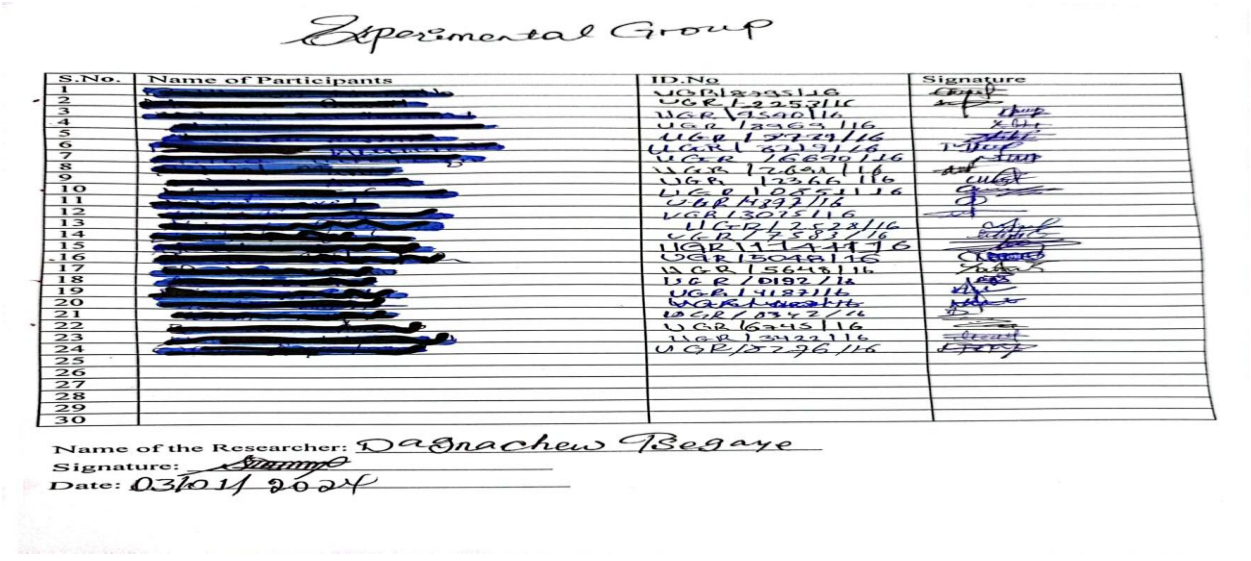
Name: Dr. Girma Gezahegn (Advisor)
Email: *girma.gezahegn@gmail.com*

Thanks for your Cooperation!

Appendix D3: Participants' Consent for the <u>Experimental Group</u> (Pilot)

Research Title: ***Investigating the Effects of Blended Learning on Students' reading comprehension at AAU***

- I certify that I have carefully read and comprehended the study's participant information leaflet.
- I am also aware that I have the option to examine and offer feedback on the focus group discussion's audio recording transcript.
- I am aware that the online conversation will have an anonymized transcript and that I can ask to see and react to it.
- I am aware that I will be able to ask questions about the study and will get comprehensive responses.
- I recognize that this is voluntary participation and that there are no consequences if I decide to stop at any moment by telling the researcher.
- I understand that all data collected will be erased and destroyed if I decide to withdraw from the research project at any point.
- I acknowledge that the collected data will be completely confidential and anonymous, accessible only to the researcher, his supervisor, and other researchers.
- I am aware that the researcher may use the anonymized data publicly for publications and conferences in academia in addition to using it for research uses.
- I signed on the following attendance form to confirm that I have been informed that this study has been reviewed by the proper authority.



Experimental Group

S.No.	Name of Participants	ID.No	Signature
1	[redacted]	UGR/[illegible]/16	
2		UGR/[illegible]/16	
3		UGR/[illegible]/16	
4		UGR/[illegible]/16	
5		UGR/[illegible]/16	
6		UGR/[illegible]/16	
7		UGR/[illegible]/16	
8		UGR/[illegible]/16	
9		UGR/[illegible]/16	
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24		UGR/[illegible]/16	
25			
26			
27			
28			
29			
30			

Name of the Researcher: Dagnachew Begaye

Signature:

Date: 03/01/2024

Appendix D4: Participants' Information Sheet for the Control Group

Research Title: ***Investigating the Effects of Blended Learning on Students Reading Comprehension Achievement at AAU***

Dear participants,

I am Dagnachew Tsegaye, a PhD candidate at Addis Ababa University, Department of English Language and Literature. Under the guidance of Dr. Girma Gezahegn, I am now working on a PhD study that examines how blended learning affects students' reading comprehension performance.

I would like to invite you to participate in the above-mentioned research title. You must read this and comprehend the purpose and scope of the research. If you are interested in taking part, you will be required to put your signature on the consent form.

In comparison to face-to-face reading instruction, I am particularly fascinated by investigating how blended learning reading affects students' reading comprehension performance. For the purpose of practicing reading comprehension through classroom instruction, your group is chosen at random to serve as the control group. By taking part in this study, you will read various kinds of texts and enhance your reading comprehension skills. Furthermore, you will get the chance to communicate with your teacher and classmates in the classroom, and you might even get valuable feedback on what you read.

The research will run for six weeks, and once you agreed to take part, you will need to:

-Complete the background questionnaire.
- Take the pretest.
- Attend classes for three hours per week and listen lectures in the classroom.

- Read texts and do exercises.
- Take the post-test.

Your name and all related data will be kept private, along with all of the data you submit. Your name will be changed and anonymized before being shared with anybody else; all the information will be anonymized, not even my thesis supervisory panel. Following the completion of the time frame for collecting data, any data that could be utilized for recognizing participants will be removed and erased. It will not be stored for longer than is necessary. A password protection mechanism will be used to store raw data. The anonymized information will be utilized exclusively for scholarly investigations and disseminated through conferences, scholarly journals, and other academic works. You will also be able to comment on and remove any information that you are not interested in me incorporating in the finalized report. You will also be able to raise questions regarding the study and get adequate responses.

Your decision to participate in my research is completely up to you. I absolutely respect your choice if you choose not to take part. You are free to leave my research at any point without incurring any penalty, and any information gathered will be erased if you decide after enrolling to change your mind.

Kindly get in touch with me if you need any more inquiries:

Name: Dagnachew Tsegaye

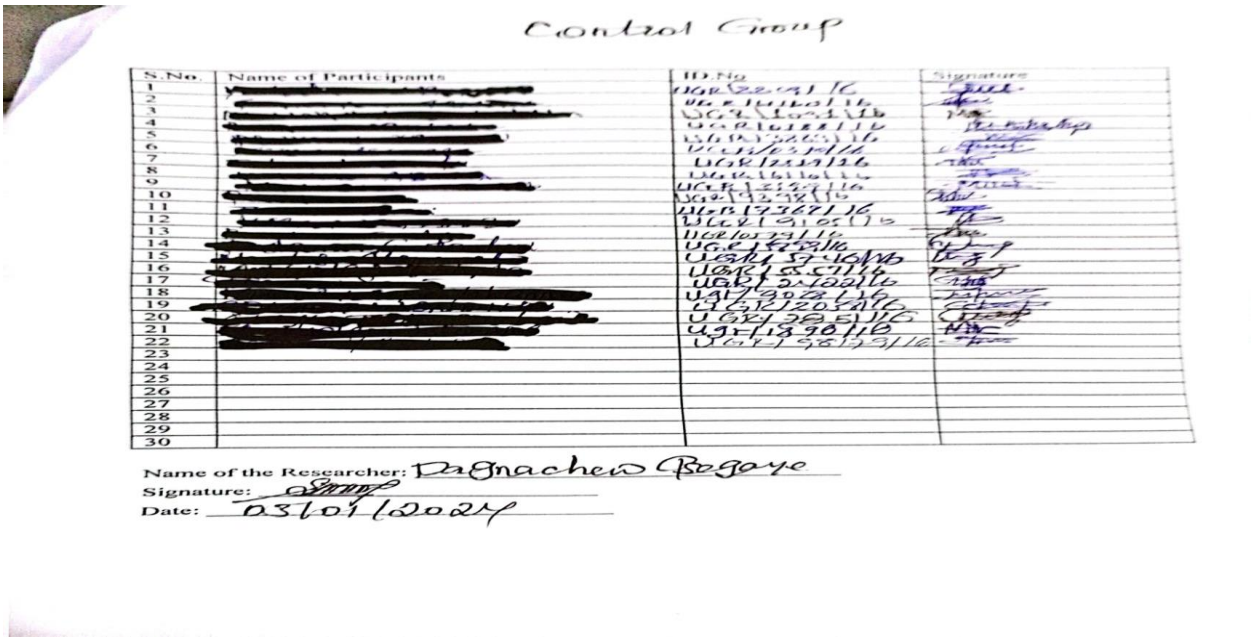
Email: dagnutsegaye@gmail.com
Tel: +251911877413
You can get in touch with my advisor if you have any questions or issues.
Name: Dr. Girma Gezahegn (Advisor)
Email: *girma.gezahegn@gmail.com*

Thanks for your cooperation!

Appendix D5: Participants' Consent for <u>the Control Group</u> (Pilot)

Research Title: ***Investigating the Effects of Blended Learning on Students' Reading Comprehension at AAU***

- I certify that I have carefully read and comprehended the study's participant information leaflet.
- I am aware that I will be able to ask questions about the study and will get comprehensive responses.
- I recognize that this is voluntary participation and that there are no consequences if I decide to stop at any moment by telling the researcher.
- I understand that all data collected will be erased and destroyed if I decide to withdraw from the research project at any point.
- I acknowledge that the collected data will be completely confidential and anonymous, accessible only to the researcher, his supervisor, and other researchers.
- I am aware that the researcher may use the anonymized data publicly for publications and conferences in academia in addition to using it for research uses.
- I signed on the following attendance form to confirm that I have been informed that this study has been reviewed by the proper authority.



Control Group

S.No.	Name of Participants	ID No	Signature
1	[redacted]		
2			
3			
4			
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10			
11			
12			
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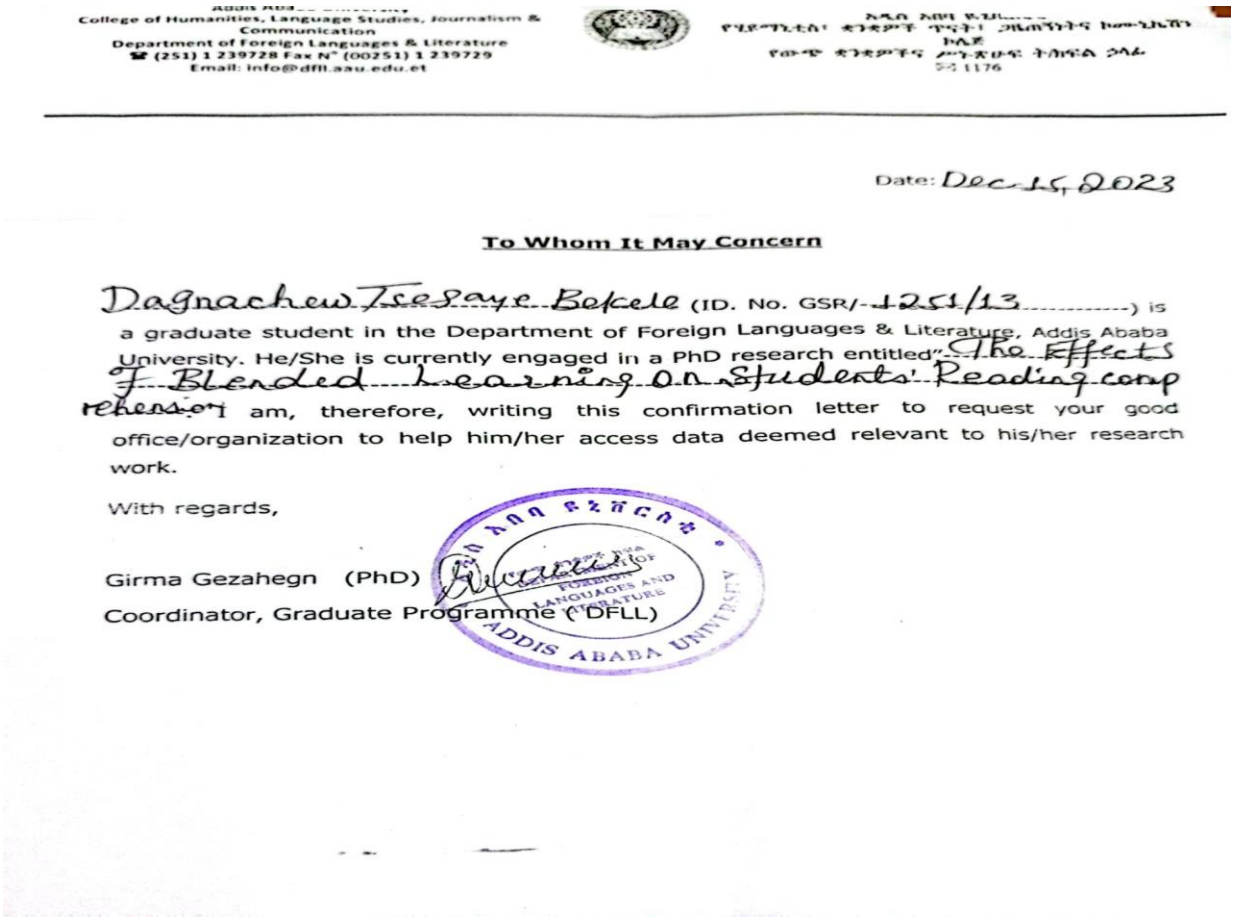
Name of the Researcher: Dagnachew Begaye
Signature:
Date: 03/01/2022

Appendix E: Letter of Cooperation



College of Humanities, Language Studies, Journalism & Communication
Department of Foreign Languages & Literature
(251) 1 239728 Fax N° (00251) 1 239729
Email: info@dfll.aau.edu.et

Date: Dec 15, 2023

To Whom It May Concern

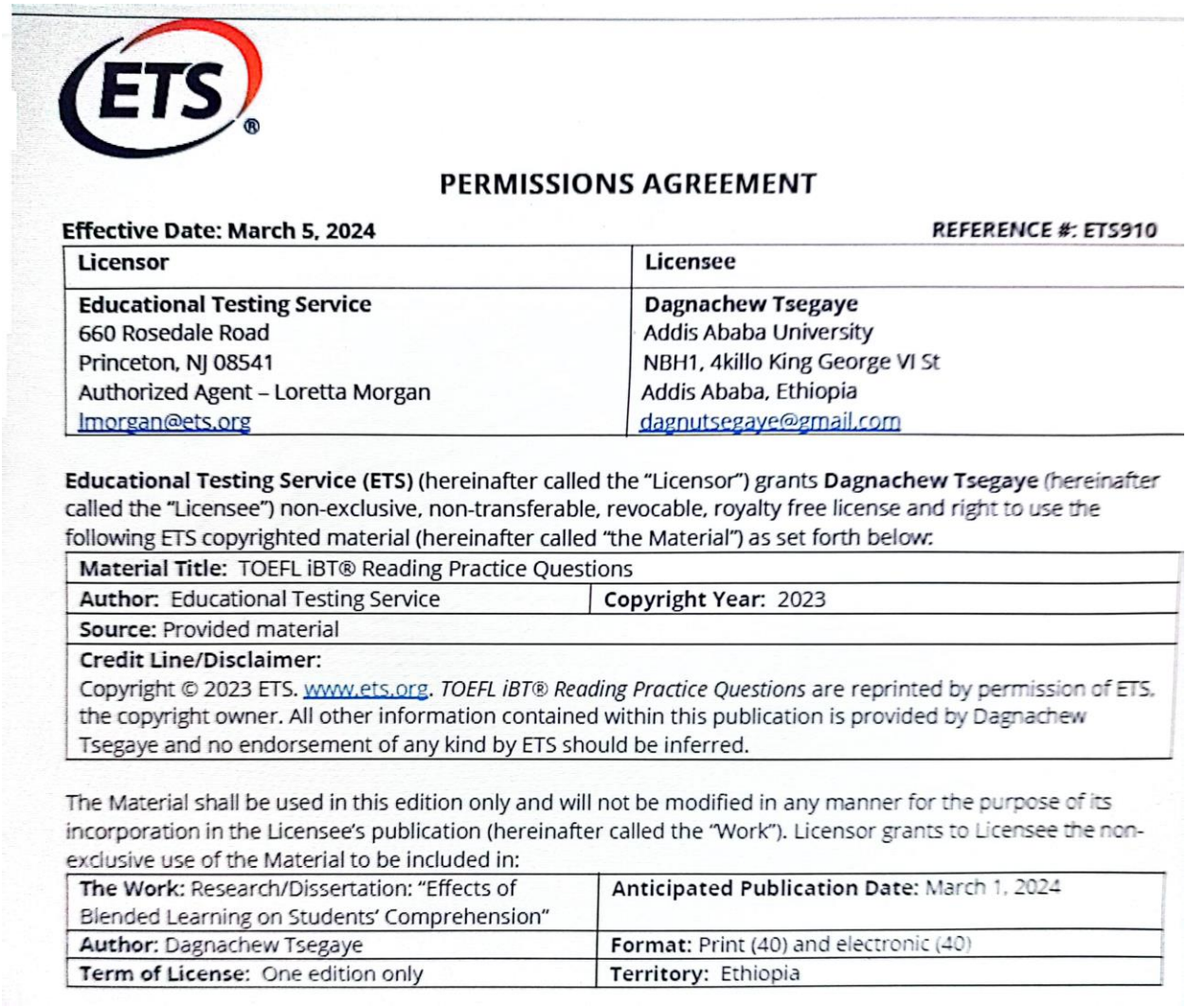
DaGnachew Tesfaye Bekele (ID. No. GSR/-1251/13) is a graduate student in the Department of Foreign Languages & Literature, Addis Ababa University. He/She is currently engaged in a PhD research entitled "The Effects of Blended learning on Students' Reading comprehension". I am, therefore, writing this confirmation letter to request your good office/organization to help him/her access data deemed relevant to his/her research work.

With regards,

Girma Gezahegn (PhD)
Coordinator, Graduate Programme (DFLL)

ADDIS ABABA UNIVERSITY

Appendix F: Permission Agreement Letter for Adapting the Pre-Post Tests



PERMISSIONS AGREEMENT

Effective Date: March 5, 2024 ***REFERENCE #: ETS910***

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Author: Dagnachew Tsegaye	**Format:** Print (40) and electronic (40)
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Appendix G: Moodle Training Certificate

Certificate of Completion

This certificate is awarded to

Dagnachew Tsegaye

for the successful completion of a training on **Learning Management Systems (MOODLE) and "Designing, Developing and Delivering e-learning Courses"** at the Center for Higher Education Research and Training of the Institute of Educational Research, Addis Ababa University.

Training Duration: 31 March to 01 April 2022 and 16 -17 May 2022 (face-to-face) and 11 April to 02 May 2022 (virtual). Average training time: 64 hours.

Belay Hagos (PhD)
Director, Institute of Educational Research (IER), Addis Ababa University

ADDIS ABABA UNIVERSITY

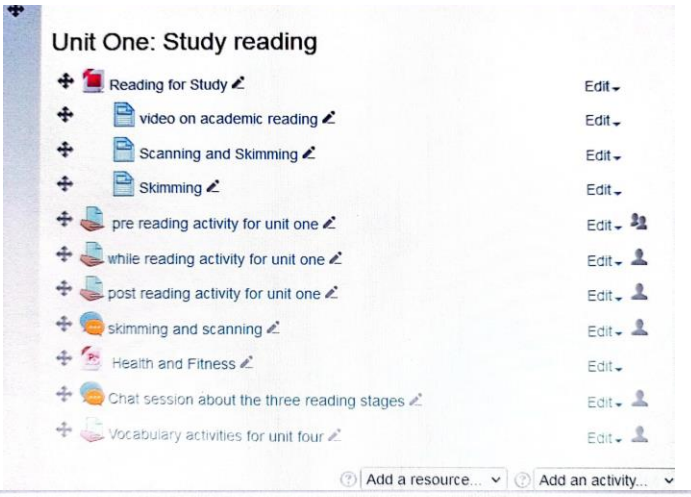
Berhanu Abera (PhD)
Head, Center for Higher Education Research and Training, IER, Addis Ababa University

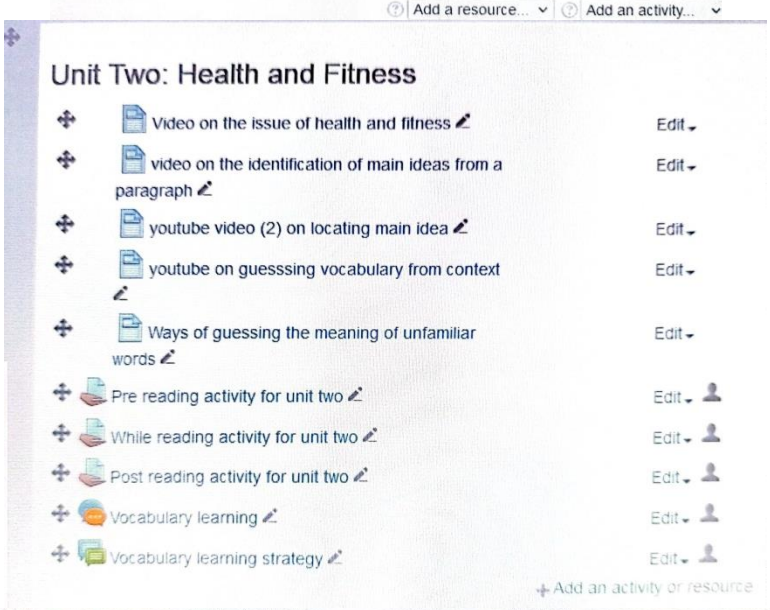
Appendix H: Pre-posttests Raw Scores for Both Groups (Pilot)

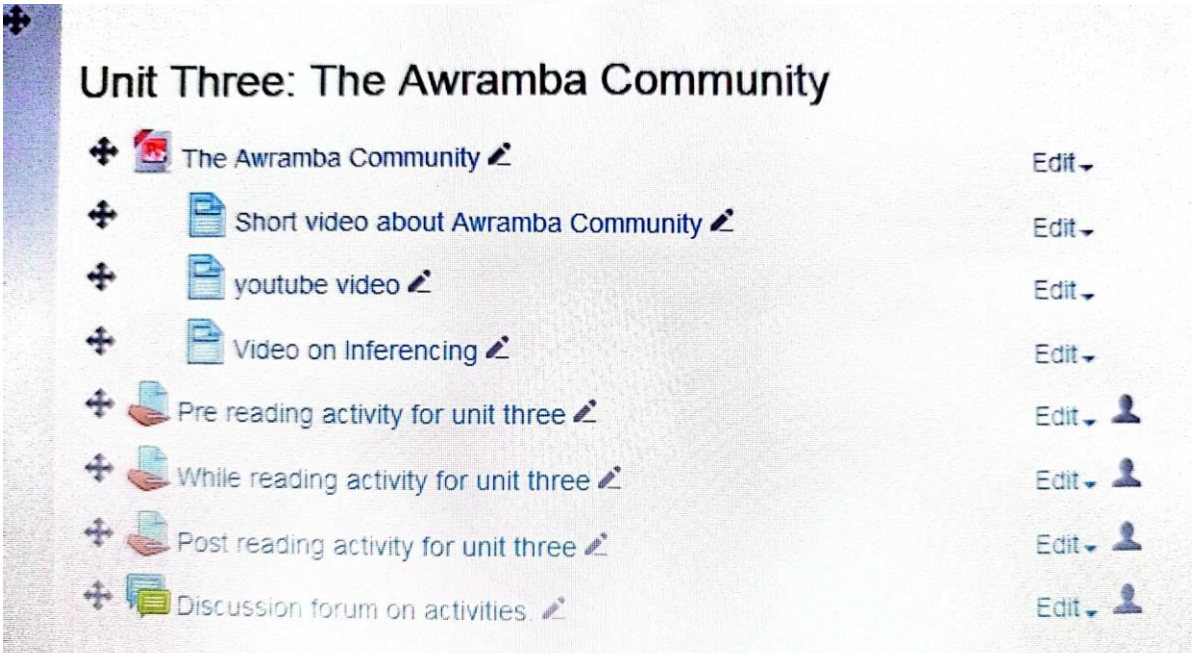
Group	Components											
Control Group	Main Idea		Factual Information		Vocabulary		Making Inference		Reference			
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Total % for Pretest	Total % for Posttest
1A	4	3	9	9	8	8	8	8	3	3	91.42	88.57
1B	2	2	3	3	3	3	2	2	3	3	37.14	45.71
1C	4	3	6	6	8	8	6	6	2	2	74.28	77.14
1D	3	4	9	9	8	8	6	6	3	3	82.85	88.57
1E	4	3	8	8	7	7	6	6	3	3	80.00	80.00
1F	2	3	8	8	6	6	4	4	3	3	65.71	77.14
1G	3	4	9	9	6	6	8	8	3	3	82.85	88.57
1H	2	4	7	7	7	7	3	3	3	3	62.85	82.85
1I	2	3	7	7	7	7	4	4	3	3	68.57	68.57
1J	3	4	7	7	8	8	8	8	3	3	82.85	80.00
1K	2	3	6	6	6	6	7	7	3	3	68.57	71.42
1L	3	3	9	9	9	9	10	10	2	2	94.28	74.28
1M	4	4	9	9	7	7	4	4	3	3	77.14	82.85
1N	3	4	7	7	7	7	6	6	3	3	74.28	74.28
1O	3	4	7	7	8	8	8	8	2	2	80.00	91.42
1P	2	4	7	7	7.	7	8	8	2	2	74.28	82.85
1Q	4	3	9	9	9	9	6	6	2	2	85.71	77.14
1R	3	4	9	9	9	9	8	8	3	3	91.42	88.00
1S	2	4	6	6	7	7	7	7	2	2	68.57	80.00
1T	2	4	7	7	6	6	6	6	2	2	65.71	82.85
1U	3	4	8	8	7	7	7	7	3	3	80.	88.57
1V	2	3	7	7	7	7	6	6	2	2	71.43	74.28

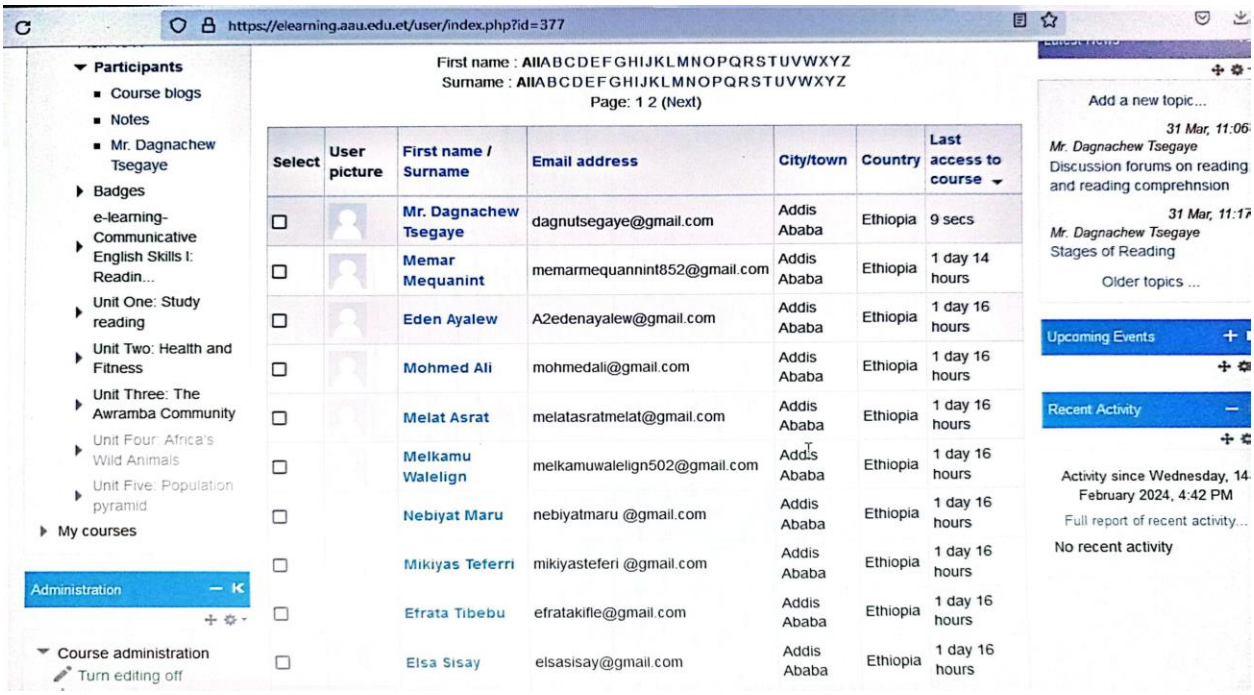
Group	Components											
Experimental Group	Main Idea		Factual Information		Vocabulary		Making Inferences		References		Total % for Pretest	Total % for Posttest
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest		
2A	3	3	7	8	8	8	8	8	2	3	85.70	85.70
2B	3	4	7	8	8	8	4	6	3	3	71.42	82.85
2C	4	4	8	8	5	7	8	7	2	2	77.14	80.00
2D	2	3	6	8	7	8	7	6	2	2	68.57	77.14
2E	3	3	8	8	7	8	5	6	3	2	74.28	77.14
2F	3	3	7	9	7	7	8	8	3	2	80.00	82.85
2G	3	3	8	9	8	7	5	6	3	3	77.14	80.00
2H	4	3	9	9	9	8	8	9	3	3	94.28	91.43
2I	3	3	9	9	8	9	5	6	2	3	77.14	85.71
2J	4	3	9	9	9	7	5	7	2	3	82.85	82.85
2K	3	4	8	9	8	8	8	7	3	3	85.71	88.57
2L	2	4	7	7	3	6	6	6	3	2	57.14	68.57
2M	3	3	9	9	9	8	8	9	2	3	88.57	91.43
2N	3	3	7	7	9	7	3	6	2	3	68.57	74.28
2O	2	3	6	7	7	7	7	8	2	3	68.57	80.00
2P	4	4	9	9	8	9	9	9	3	3	94.28	97.14
2Q	3	4	9	9	8	7	8	8	2	3	85.71	88.57
2R	4	4	9	9	9	9	9	8	3	3	97.14	94.28
2S	2	3	7	7	7	8	4	6	2	3	62.85	77.14
2T	4	4	9	8	6	8	8	8	3	3	85.71	88.57
2U	3	4	8	9	9	8	4	7	3	3	77.14	85.71
2V	2	3	6	7	7	7	8	7	2	3	71.42	77.14
2W	3	4	8	9	5	6	6	7	3	3	71.42	82.57

Appendix I: Sample Interfaces of the Course


Unit One: Study reading
Reading for Study
video on academic reading
Scanning and Skimming
Skimming
pre reading activity for unit one
while reading activity for unit one
post reading activity for unit one
skimming and scanning
Health and Fitness
Chat session about the three reading stages
Vocabulary activities for unit four
Edit
Add a resource...
Add an activity...


Unit Two: Health and Fitness
Video on the issue of health and fitness
video on the identification of main ideas from a paragraph
youtube video (2) on locating main idea
youtube on guesssing vocabulary from context
Ways of guessing the meaning of unfamiliar words
Pre reading activity for unit two
While reading activity for unit two
Post reading activity for unit two
Vocabulary learning
Vocabulary learning strategy
Edit
Add an activity or resource


Unit Three: The Awramba Community
The Awramba Community
Short video about Awramba Community
youtube video
Video on Inferencing
Pre reading activity for unit three
While reading activity for unit three
Post reading activity for unit three
Discussion forum on activities.
Edit


https://elearning.aau.edu.et/user/index.php?id=377
Participants
Course blogs
Notes
Mr. Dagnachew Tsegaye
Badges
e-learning-Communicative English Skills I: Readin...
Unit One: Study reading
Unit Two: Health and Fitness
Unit Three: The Awramba Community
Unit Four: Africa's Wild Animals
Unit Five: Population pyramid
My courses
Administration
Course administration
Turn editing off
First name : All A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Surname : All A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Page: 1 2 (Next)
Select
User picture
First name / Surname
Email address
City/town
Country
Last access to course
Mr. Dagnachew Tsegaye
dagnutsegaye@gmail.com
Addis Ababa
Ethiopia
9 secs
Memar Mequanint
memarmequannint852@gmail.com
Addis Ababa
Ethiopia
1 day 14 hours
Eden Ayalew
A2edenayalew@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Mohmed Ali
mohmedali@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Melat Asrat
melatasratmelat@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Melkamu Walelign
melkamuwalelign502@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Nebiyat Maru
nebiyatmaru @gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Mikiyas Teferri
mikiyasteferi @gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Efrata Tibebu
efratakifle@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Elsa Sisay
elsasisay@gmail.com
Addis Ababa
Ethiopia
1 day 16 hours
Add a new topic...
31 Mar, 11:06
Mr. Dagnachew Tsegaye
Discussion forums on reading and reading comprehnsion
31 Mar, 11:17
Mr. Dagnachew Tsegaye
Stages of Reading
Older topics ...
Upcoming Events
Recent Activity
Activity since Wednesday, 14 February 2024, 4:42 PM
Full report of recent activity...
No recent activity

Appendix J: Background Information Questionnaire Results for Both Groups (Pilot)

Age and Gender of the Respondents (Control Group)

Age	Frequency	Percent	Gender	Frequency	Percent
17-20	17	77.3	Female	12	54.5
21-24	5	22.7	Male	10	45.5
Total	22	100.0	Total	22	100.0

Questionnaire results for the Experimental Group

Gender	Frequency	Percent	Age	Frequency	Percent
Female	12	52.2	17-20	22	95.7
Male	11	47.8	21-24	1	4.3
Total	23	100.0	Total	23	100.0

Do you have personal computer or smartphone?

	Frequency	Percent
Yes	23	100.0

How can you describe your skill of using a computer or Smartphone?

	Frequency	Percent
poor	2	8.7
moderate	6	26.1
good	10	43.5
very good	3	13.0
Excellent	2	8.7
Total	23	100.0

How much experience do you have using social media like Google Docs (Drive), Facebook, YouTube, Twitter, email, telegram, Instagram, tiktok etc. for academic purposes?

	Frequency	Percent
None	1	4.3
less than a year	4	17.4
one to two years	6	26.1
more than two years	12	52.2
Total	23	100.0

Which social media do you regularly use for academic purposes?

	Frequency	Percent
Google Docs (Drive)	6	26.1
YouTube	11	47.8
Telegram	6	26.1
Total	23	100.0

Appendix K: Participants Concent Agreement and Information Sheet

Appendix K1: Instructor's Consent Agreement Form (Main Study)

2. A Note to the Trainee Instructor

Dear Instructor Trainee:

Firstly, I am interested in expressing my gratitude for your willingness to take time and energy, as this will be crucial to the study's effective completion. This training is an effort to exchange concepts regarding the blended learning (BL) approach. The effective implementation of the method in the reading classes will come from the trainee instructor's honest follow-up of the training.

Following the training, two sections of first-year students enrolled in the "Communicative English Skills I" course—which has been chosen as a sample for the current study—will be under your instruction. Please make an honest effort to attend the training on time in order to ensure that the method is implemented correctly. The instruction manual will be provided to you for use during class and as an additional reference during the session.

It is important for you to understand that the training manual you are reading is based on the AAU e-learning teacher training manual, which was created in January 2020 by the Learning Teaching Technologies Team (http://elearning.aau.edu.et). It is therefore anticipated that the BL strategy, which is based on this handbook, will be used in the reading class with ease and success in order to accomplish the desired goal.

Thank you for your cooperation!

2. The training agreement form

Before commencing the blended learning approach training in reading lessons, please fill out this form.

Address of the instructor trainee

Name: _____ Address:_____

Phone no: _____ E-mail: _____

Trainer's Address

Name: _____ Address:_____

Phone Number: _____ E-mail: _____

The training will be offered from _____ to _____. As a teacher trainee, I have participated in every training session the researcher has provided on the e-learning method. I certify that I have received the instruction, and I am fully willing to use the strategy in BL-based reading classes throughout the study. I will also adhere to all the protocols that I am required to follow.

Trainee's Sign _____ Date _____

Trainer's Sign _____ Date _____

Appendix K2: Participants' Information Sheet for the Experimental Group

Research Title: ***Investigating the Effects of Blended Learning on Students reading comprehension Achievement at AAU***

Dear participants,

I am Dagnachew Tsegaye, a PhD candidate at Addis Ababa University, Department of English Language and Literature. Under the guidance of Dr. Girma Gezahegn, I am now working on a PhD study that examines how blended learning affects students' reading comprehension performance.

I would like to invite you to participate in the above-mentioned research title. You must read this and comprehend the purpose and scope of the research. If you are interested in taking part, you will be required to put your signature on the consent form.

The impact of BL on students' reading comprehension, your attitudes on BL-based reading comprehension, and the advantages and difficulties you have faced when using BL are the areas that can be covered in this study. You will get technical training if you take part in this study. In an online setting, you will also have the chance to practice reading in English outside of the classroom, which could aid in the improvement of your reading comprehension performance. Furthermore, you will get the chance to communicate with your teacher and classmates virtually, and you might even get valuable feedback on what you read.

The research will run for six weeks, and once you agreed to take part, you will need to:

-Complete the background questionnaire.
- Take the pretest.
- Attend lectures outside of the classroom or in the institution.
- Use the LMS platform to engage in virtual learning activities with your classmates.
- Take the post-test.
- complete a questionnaire on your attitudes toward adopting BL-based reading comprehension, as well as the advantages and difficulties you faced during the process.
- Take part in a 40-minute focus group conversation (for selected students).

Your name and all related data will be kept private, along with all of the data you submit. Your name will be changed and anonymized before being shared with anybody else; all the information will be anonymized, not even my thesis supervisory panel. Following the completion of the time frame for collecting data, any data that could be utilized for recognizing participants will be removed and erased. It will not be stored for longer than is necessary. A password protection mechanism will be used to store raw data. The anonymized information will be utilized exclusively for scholarly investigations and disseminated through conferences, scholarly journals, and other academic works. You will have the opportunity to review the audio recordings of the discussions in the focus group and the final report outcome. You will also be able to comment on and remove any information and items that you are not interested in me incorporating in the finalized report. You will also be able to raise questions regarding the study and get adequate responses.

Your decision to participate in my research is completely up to you. I absolutely respect your choice if you choose not to take part. You are free to leave my research at any point without penalty, and any information gathered will be erased if you decide after enrolling to change your

mind. Additionally, if you have any upcoming tests for your face-to-face courses, you can take a break from working online.

Kindly get in touch with me if you need any more inquiries:

Name: Dagnachew Tsegaye
Email: dagnutsegaye@gmail.com
Tel: +251911877413

You can get in touch with my advisor if you have any questions or issues.

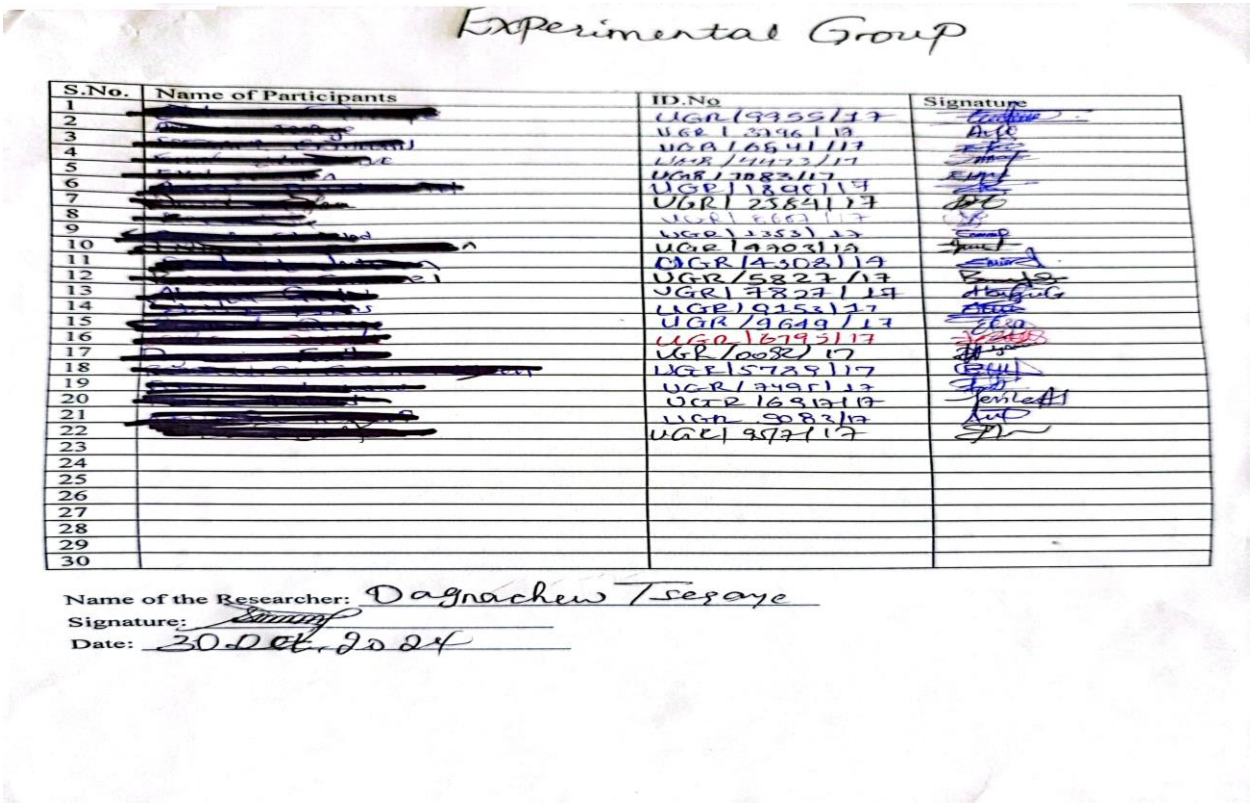
Name: Dr. Girma Gezahegn (Advisor)
Email: *girma.gezahegn@gmail.com*

Thanks for your Cooperation!

Appendix K3: Participants' Consent for the Experimental Group

Research Title: Investigating the Effects of Blended Learning on Students' reading comprehension at AAU

I certify that I have carefully read and comprehended the study's participant information leaflet.
I am also aware that I have the option to examine and offer feedback on the focus group discussion's audio recording transcript.
I am aware that the online conversation will have an anonymized transcript and that I can ask to see and react to it.
I am aware that I will be able to ask questions about the study and will get comprehensive responses.
I recognize that this is voluntary participation and that there are no consequences if I decide to stop at any moment by telling the researcher.
I understand that all data collected will be erased and destroyed if I decide to withdraw from the research project at any point.
I acknowledge that the collected data will be completely confidential and anonymous, accessible only to the researcher, his supervisor, and other researchers.
I am aware that the researcher may use the anonymized data publicly for publications and conferences in academia in addition to using it for research uses.
I signed on the following attendance form to confirm that I have been informed that this study has been reviewed by the proper authority.



Experimental Group

S.No.	Name of Participants	ID.No	Signature
1	[redacted]	UGR/9955/17	
2		UGR/3396/13	
3		UGR/6641/17	
4		UGR/4473/17	
5		UGR/7083/17	
6		UGR/1895/19	
7		UGR/2584/17	
8		UGR/8[illegible]/17	
9		UGR/3353/13	
10		UGR/9903/13	
11		UGR/4308/19	
12		UGR/5827/17	
13		UGR/9823/19	
14		UGR/0915/17	
15		UGR/9649/17	
16		UGR/6795/17	
17		UGR/0082/17	
18		UGR/5785/17	
19		UGR/3495/13	
20		UGR/6911/19	
21		UGR/9083/13	
22		UGR/9571/17	
23			
24			
25			
26			
27			
28			
29			
30			

Name of the Researcher: Dagnachew Tsegaye
Signature:
Date: 30 Oct. 2024

S.No.	Name of Participants	ID.No	Signature
1	[redacted]	UGR/4396/17	
2		UGR/1419/17	
3		UGR/4952/17	
4		UGA/2481/17	
5		UGR/5512/17	
6		UGR/9085/17	
7		UGR/2855/17	
8		UGR/7911/17	
9		UGR/1288/17	
10		UGR/0008/17	
11		UGR/1837/17	
12		UGR/2958/17	
13		UGR/2114/17	
14		UGR/2147/17	
15		UGR/8953/17	
16		UGR/9053/17	
17		UGR/0397/17	
18		UGR/0067/17	
19		UGR/3391/17	
20		UGR/7290/17	
21			
22			
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24			
25			
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27			
28			
29			
30			

Name of the Researcher: Dagnachew Tsegaye

Signature:

Date: 30 Oct 2024

Appendix K4: Participants' Information Sheet for the Control Group

Research Title: ***Investigating the Effects of Blended Learning on Students Reading Comprehension Achievement at AAU***

Dear participants,

I am Dagnachew Tsegaye, a PhD candidate at Addis Ababa University, Department of English Language and Literature. Under the guidance of Dr. Girma Gezahegn, I am now working on a PhD study that examines how blended learning affects students' reading comprehension performance.

I would like to invite you to participate in the above-mentioned research title. You must read this and comprehend the purpose and scope of the research. If you are interested in taking part, you will be required to put your signature on the consent form.

In comparison to face-to-face reading instruction, I am particularly fascinated by investigating how blended learning reading affects students' reading comprehension performance. For the purpose of practicing reading comprehension through classroom instruction, your group is chosen at random to serve as the control group. By taking part in this study, you will read various kinds of texts and enhance your reading comprehension skills. Furthermore, you will get the chance to communicate with your teacher and classmates in the classroom, and you might even get valuable feedback on what you read.

The research will run for six weeks, and once you agreed to take part, you will need to:

-Complete the background questionnaire.
- Take the pretest.
- Attend classes for three hours per week and listen lectures in the classroom.

- Read texts and do exercises.
- Take the post-test.

Your name and all related data will be kept private, along with all of the data you submit. Your name will be changed and anonymized before being shared with anybody else; all the information will be anonymized, not even my thesis supervisory panel. Following the completion of the time frame for collecting data, any data that could be utilized for recognizing participants will be removed and erased. It will not be stored for longer than is necessary. A password protection mechanism will be used to store raw data. The anonymized information will be utilized exclusively for scholarly investigations and disseminated through conferences, scholarly journals, and other academic works. You will also be able to comment on and remove any information that you are not interested in me incorporating in the finalized report. You will also be able to raise questions regarding the study and get adequate responses.

Your decision to participate in my research is completely up to you. I absolutely respect your choice if you choose not to take part. You are free to leave my research at any point without incurring any penalty, and any information gathered will be erased if you decide after enrolling to change your mind.

Kindly get in touch with me if you need any more inquiries:

Name: Dagnachew Tsegaye

Email: dagnutsegaye@gmail.com
Tel: +251911877413
You can get in touch with my advisor if you have any questions or issues.
Name: Dr. Girma Gezahegn (Advisor)
Email: *girma.gezahegn@gmail.com*

Thanks for your cooperation!

Appendix K5: Participants' Consent for <u>the Control Group</u>

Research Title: Investigating the Effects of Blended Learning on Students' Reading Comprehension at AAU

I certify that I have carefully read and comprehended the study's participant information leaflet.
I am aware that I will be able to ask questions about the study and will get comprehensive responses.
I recognize that this is voluntary participation and that there are no consequences if I decide to stop at any moment by telling the researcher.
I understand that all data collected will be erased and destroyed if I decide to withdraw from the research project at any point.
I acknowledge that the collected data will be completely confidential and anonymous, accessible only to the researcher, his supervisor, and other researchers.
I am aware that the researcher may use the anonymized data publicly for publications and conferences in academia in addition to using it for research uses.
I signed on the following attendance form to confirm that I have been informed that this study has been reviewed by the proper authority.

Control Group

S.No.	Name of Participants	ID.No	Signature
1	[redacted]	UGR/21049/13	
2	[redacted]	UGR/2638/13	
3	[redacted]	UGR/6162/13	
4	[redacted]	UGR/6054/13	
5	[redacted]	UGR/9704/13	
6	[redacted]	UGR/[illegible]	
7	[redacted]	UGR/2348/13	
8	[redacted]	UGR/2468/13	
9	[redacted]	UGR/20229/13	
10	[redacted]	UGR/13524/13	
11	[redacted]	UGR/9677/13	
12	[redacted]	UGR/0186/13	
13	[redacted]	UGR/4117/13	
14	[redacted]	UGR/08832/13	
15	[redacted]	UGR/9530/13	
16	[redacted]	UGR/5261/13	
17	[redacted]	UGR/4419/13	
18	[redacted]	UGR/5283/13	
19	[redacted]	UGR/2482/13	
20	[redacted]	UGR/1551/13	
21	[redacted]	UGR/6318/13	
22			
23			
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26			
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28			
29			
30			

Name of the Researcher: Dagnachew Tsegaye
Signature: [signature]
Date: 30 DEC, 2024

Control Group

S.No.	Name of Participants	ID.No	Signature
1	[redacted]	UGR/5920/17	
2	[redacted]	UGR/3524/17	
3	[redacted]	UGR/2104/17	
4	[redacted]	UGR/1551/17	
5	[redacted]	UGR/5287/17	
6	[redacted]	UGR/2675/17	
7	[redacted]	UGR/9704/17	
8	[redacted]	UGR/6160/17	
9	[redacted]	UGR/2349/17	
10	[redacted]	UGR/2028/17	
11	[redacted]	UGR/9677/17	
12	[redacted]	UGR/4117/17	
13	[redacted]	UGR/4580/17	
14	[redacted]	UGR/6318/17	
15	[redacted]	UGR/6054/17	
16	[redacted]	UGR/5261/17	
17	[redacted]	UGR/9530/17	
18	[redacted]	UGR/2347/17	
19	[redacted]	UGR/6468/17	
20	[redacted]	UGR/10832/17	
21	[redacted]	UGR/6705/17	
22			
23			
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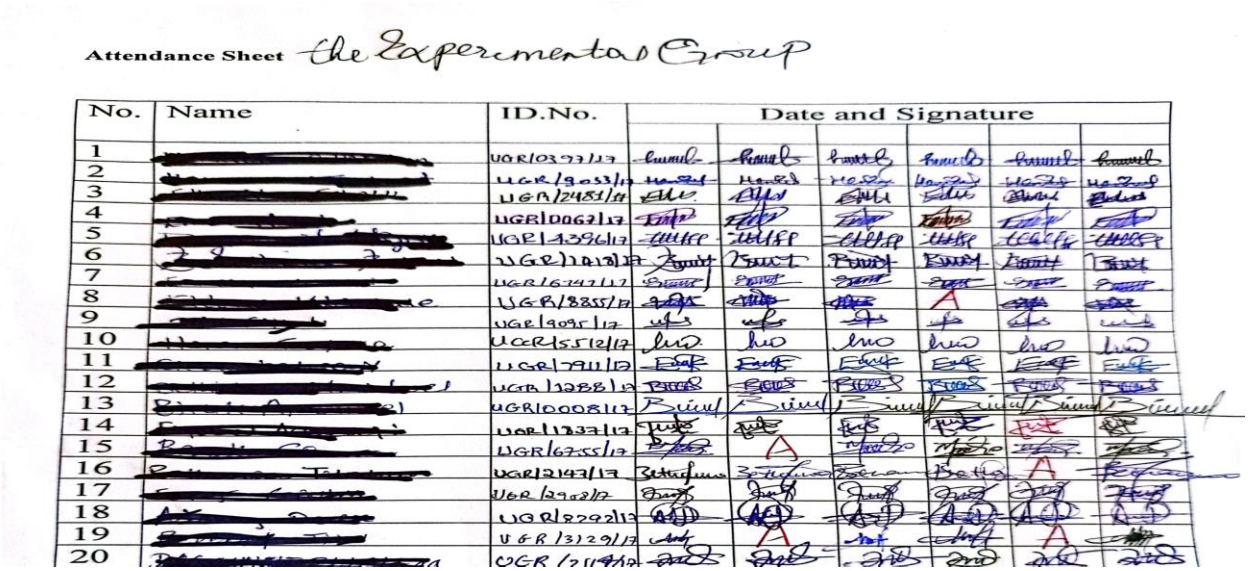
Name of the Researcher: Dagnachew Tsegaye

Signature: _____

Date: 30/06/2024

Appendix L: Sample Attendance Sheet for the Experimental Group



Attendance Sheet the Experimental Group

No.	Name	ID.No.	Date and Signature					
1	[redacted]	UGR/0397/13						
2	[redacted]	UGR/9053/13						
3	[redacted]	UGR/2485/13						
4	[redacted]	UGR/0062/13						
5	[redacted]	UGR/4396/13						
6	[redacted]	UGR/1818/13						
7	[redacted]	UGR/6747/13						
8	[redacted]	UGR/8855/13						
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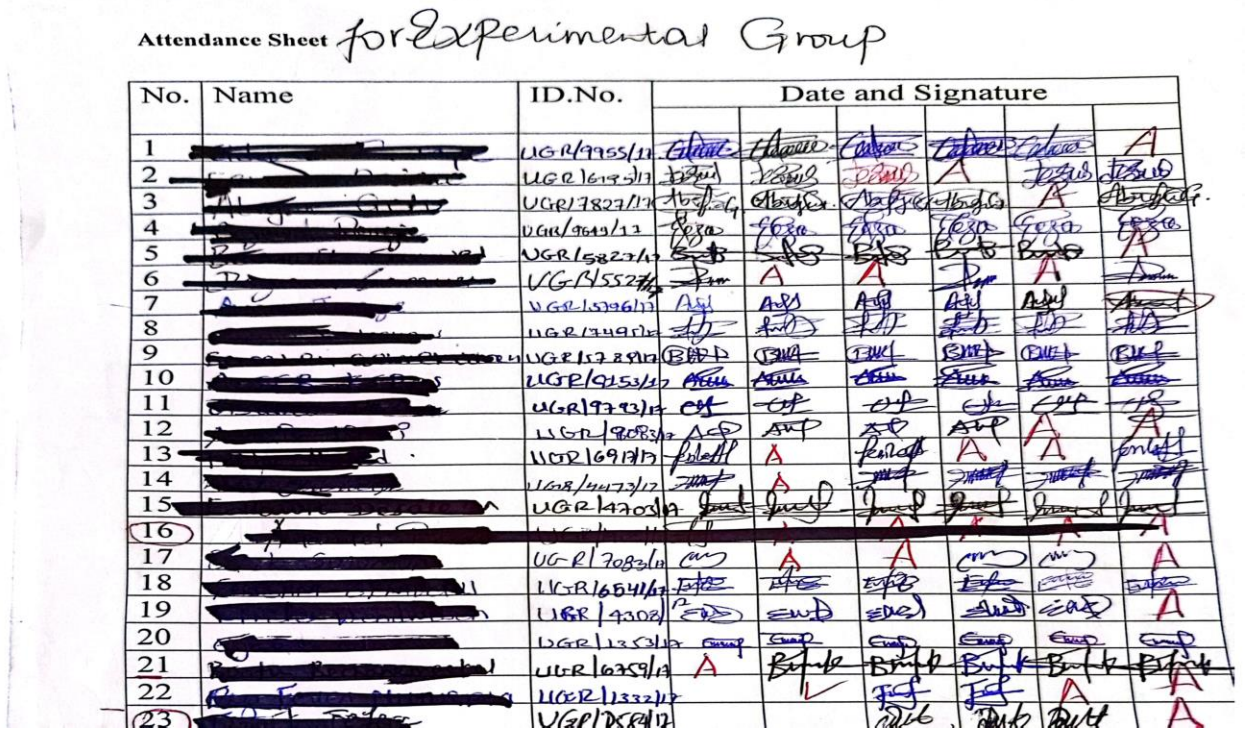
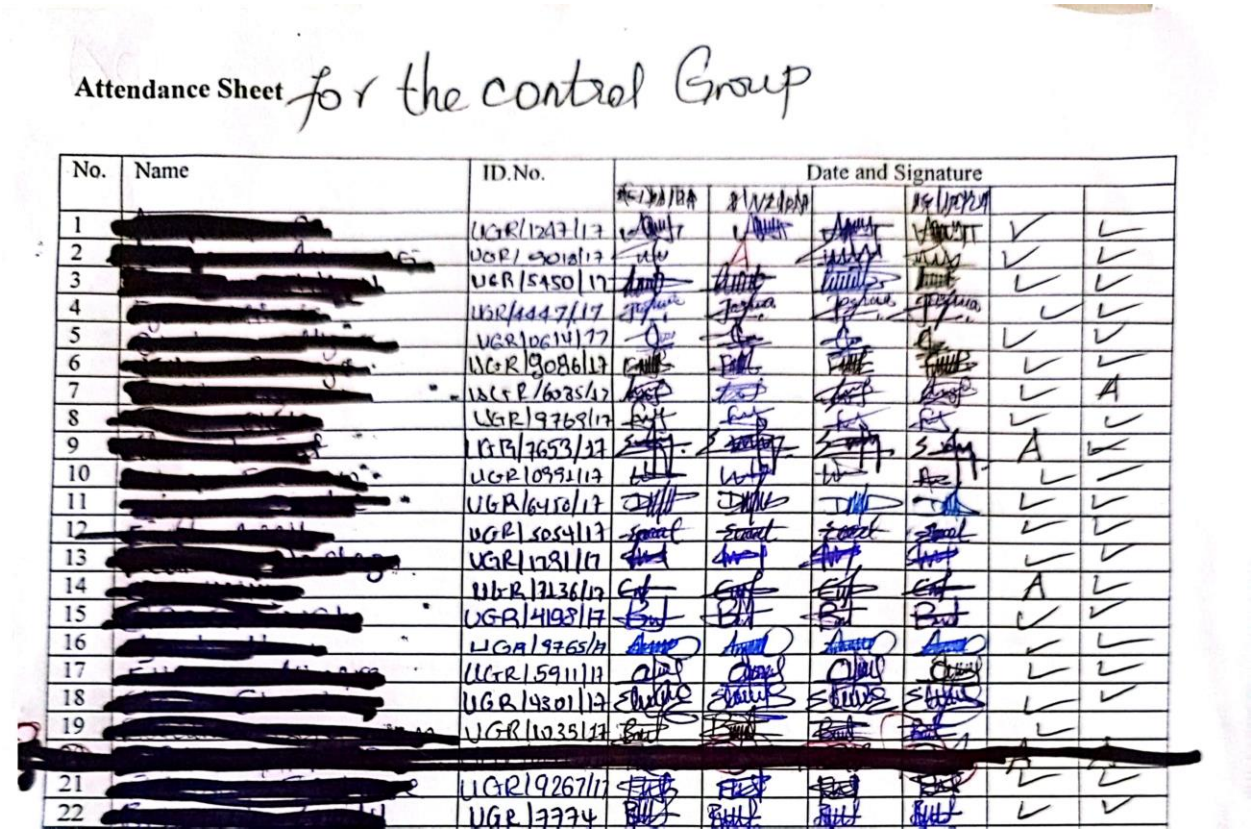
11	[redacted]	UGR/7911/13						
12	[redacted]	UGR/1388/13						
13	[redacted]	UGR/0008/13						
14	[redacted]	UGR/1337/13						
15	[redacted]	UGR/6755/13						
16	[redacted]	UGR/2147/13						
17	[redacted]	UGR/2908/13						
18	[redacted]	UGR/8292/13						
19	[redacted]	UGR/3129/13						
20	[redacted]	UGR/7114/13						



Attendance Sheet for Experimental Group

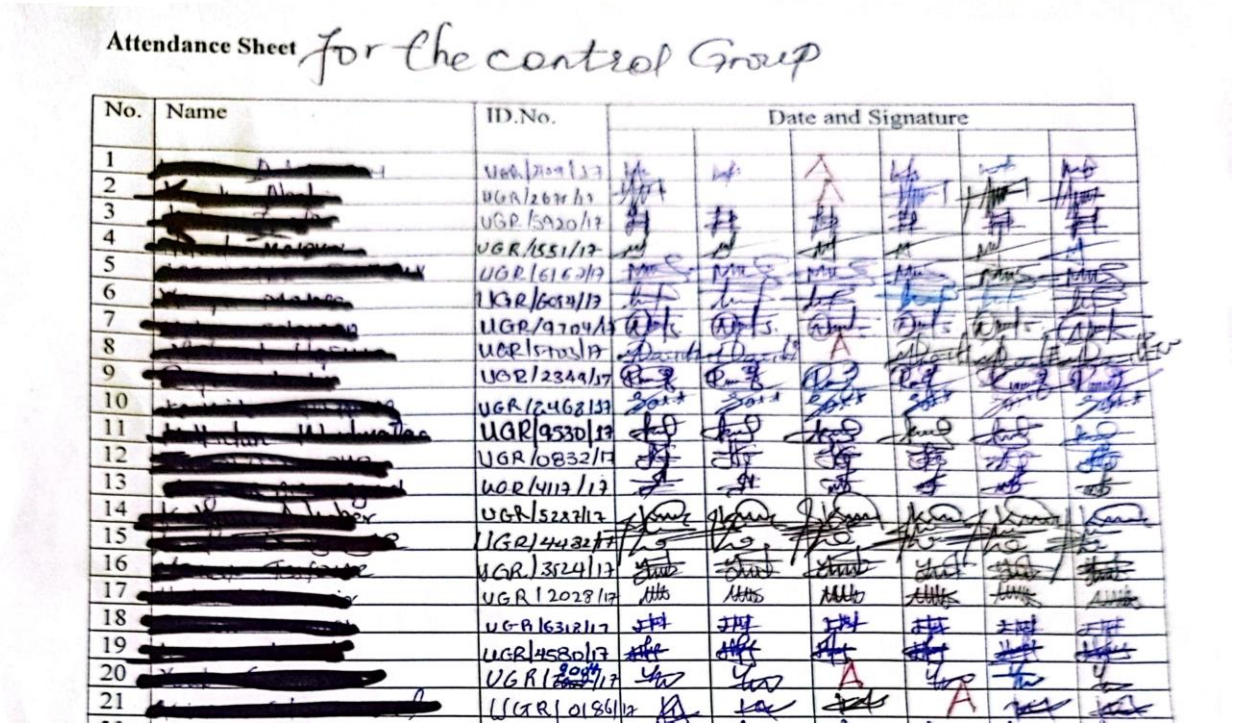
No.	Name	ID.No.	Date and Signature					
1	[redacted]	UGR/9955/13						
2	[redacted]	UGR/6194/13						
3	[redacted]	UGR/7827/13						
4	[redacted]	UGR/9619/13						
5	[redacted]	UGR/5827/13						
6	[redacted]	UGR/5527/13						
7	[redacted]	UGR/5396/13						
8	[redacted]	UGR/3449/13						
9	[redacted]	UGR/3789/13						
10	[redacted]	UGR/9153/13						
11	[redacted]	UGR/9793/13						
12	[redacted]	UGR/9083/13						
13	[redacted]	UGR/6913/13						
14	[redacted]	UGR/4477/13						
15	[redacted]	UGR/4705/13						
16	[redacted]	[redacted]						
17	[redacted]	UGR/7083/13						
18	[redacted]	UGR/6541/13						
19	[redacted]	UGR/4302/13						
20	[redacted]	UGR/1350/13						
21	[redacted]	UGR/6359/13						
22	[redacted]	UGR/1332/13						
23	[redacted]	UGR/0584/13						

Appendix M: Sample Attendance Sheet for the Control Group



Attendance Sheet for the control Group

No.	Name	ID.No.	Date and Signature					
1	[redacted]	UGR/1247/17					✓	✓
2	[redacted]	UGR/3018/17					✓	✓
3	[redacted]	UGR/5450/17					✓	✓
4	[redacted]	UGR/4447/17					✓	✓
5	[redacted]	UGR/0614/17					✓	✓
6	[redacted]	UGR/3086/17					✓	✓
7	[redacted]	UGR/6035/17					✓	A
8	[redacted]	UGR/9769/17					✓	✓
9	[redacted]	UGR/7653/17					A	✓
10	[redacted]	UGR/0992/17					✓	✓
11	[redacted]	UGR/6456/17					✓	✓
12	[redacted]	UGR/5054/17					✓	✓
13	[redacted]	UGR/1781/17					✓	✓
14	[redacted]	UGR/2136/17					A	✓
15	[redacted]	UGR/4198/17					✓	✓
16	[redacted]	UGR/9765/17					✓	✓
17	[redacted]	UGR/5911/17					✓	✓
18	[redacted]	UGR/4301/17					✓	✓
19	[redacted]	UGR/1035/17					✓	
[redacted]								
21	[redacted]	UGR/9267/17					✓	✓
22	[redacted]	UGR/7774					✓	✓



Attendance Sheet for the control Group

No.	Name	ID.No.	Date and Signature					
1	[redacted]	UGR/2099/17						
2	[redacted]	UGR/2677/17						
3	[redacted]	UGR/5920/17						
4	[redacted]	UGR/1551/17						
5	[redacted]	UGR/6162/17						
6	[redacted]	UGR/6054/17						
7	[redacted]	UGR/9704/17						
8	[redacted]	UGR/5709/17						
9	[redacted]	UGR/2349/17						
10	[redacted]	UGR/2468/17						
11	[redacted]	UGR/9530/17						
12	[redacted]	UGR/0832/17						
13	[redacted]	UGR/4117/17						
14	[redacted]	UGR/5227/17						
15	[redacted]	UGR/4432/17						
16	[redacted]	UGR/3524/17						
17	[redacted]	UGR/2028/17						
18	[redacted]	UGR/6312/17						
19	[redacted]	UGR/4580/17						
20	[redacted]	UGR/8084/17						
21	[redacted]	UGR/0186/17						

Appendix N: E-Learning Training Guide Manual For Students

TRAINING MANUAL

AAU e-Learning Guide manual For Students

Learning management system (LMS)

A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance. A learning management system may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums.

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Moodle
Blackboard
E-Front
ATutor
WebCT
Etc…..

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A quick way to share documents:

Moodle provides a place where you can easily create web pages with information about your course and provide links to word documents, slides, and other resources that your students will want to access.

Easy access to relevant and useful online resources:

The department and the university provide a wealth of materials and resources, but catering for so many different types of students it can be hard for learners to find those that are most relevant

to them. You can use your Moodle to provide links directly to the resources that will be most useful for your students.

Online assignment handling:

When your students and tutors are not close to online assignment handling can save time and effort for everyone involved – whether it is just used for student submission with marking done on paper or the whole process is moved online saving time, postage and paper.

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E-Learning material requirements

Word files
Presentations
PDF files
Video
Web link
Notices
Assessments
Animations
Blog and discussion
Chat
Etc…..

Other advantages –

Save time and money – making resources available online can save time and money in photocopying

Control access to different areas – can make a space for dispersed tutors to communicate with each other as well as students. .

Use less paper – keep a central copy online so everyone can find the latest version of a course handbook etc. Provide handouts online and students only print out what they really need.

Designed to encourage collaborative learning – Moodle makes it easy to model the tutorial system online if you want to use it with globally distributed students.

Easy to experiment with new ideas and tools – a low risk way to incorporate new tools and ideas into your teaching.

Manage your materials – if all your course information is on Moodle this is easy access this year after year.

Other features and tools:

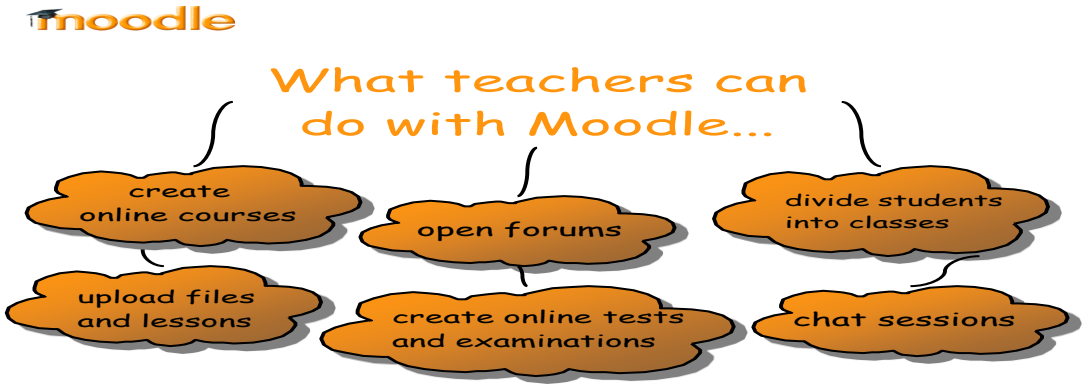
Course calendar – use this to flag important events to everyone on your course.

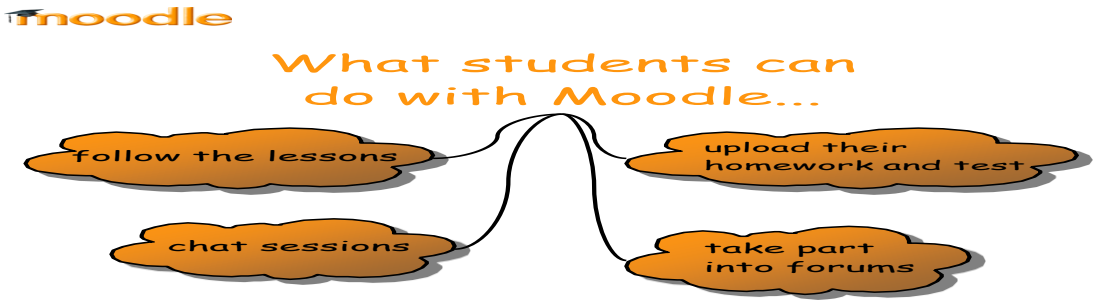
Profiles and contact information – help students and staff gets to know each other at the start of the course, also hold information about course team and students in one place.

Deliver content – post up slides etc

Video and audio – many academics find it easy to record lectures as podcasts or even arrange for videos of lectures or special events– posting these online and making it available to students is straight forward with Moodle

Group tools for students – there are many tools that students can use for collaboration with each other e.g. forums, wiki and chat





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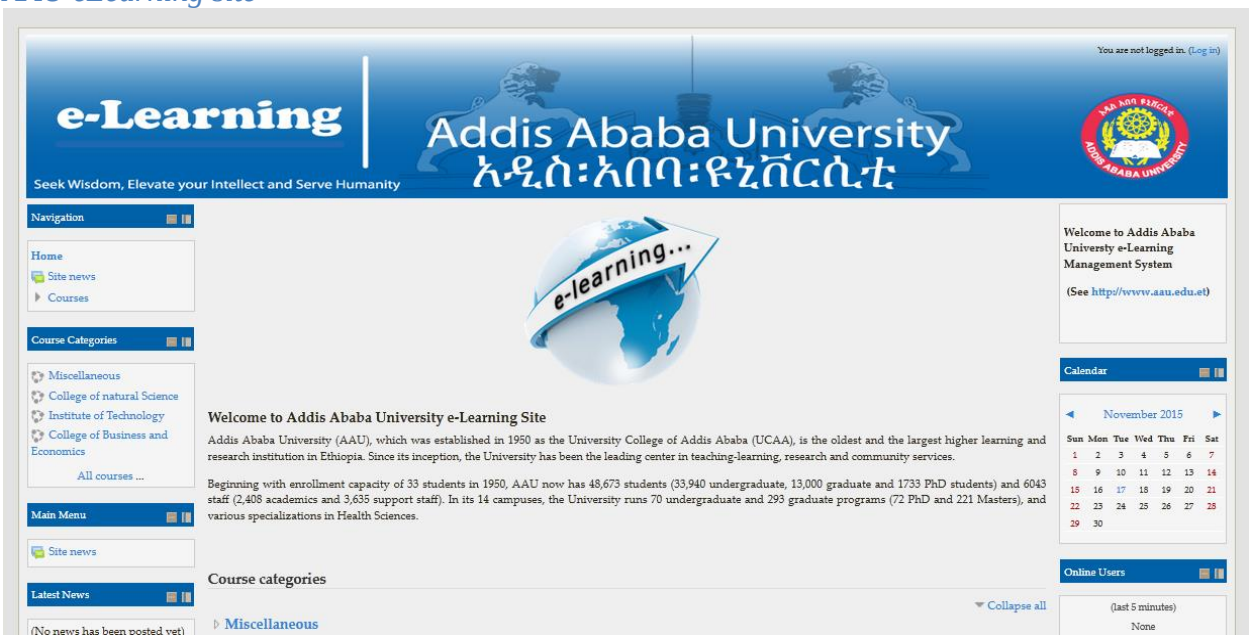
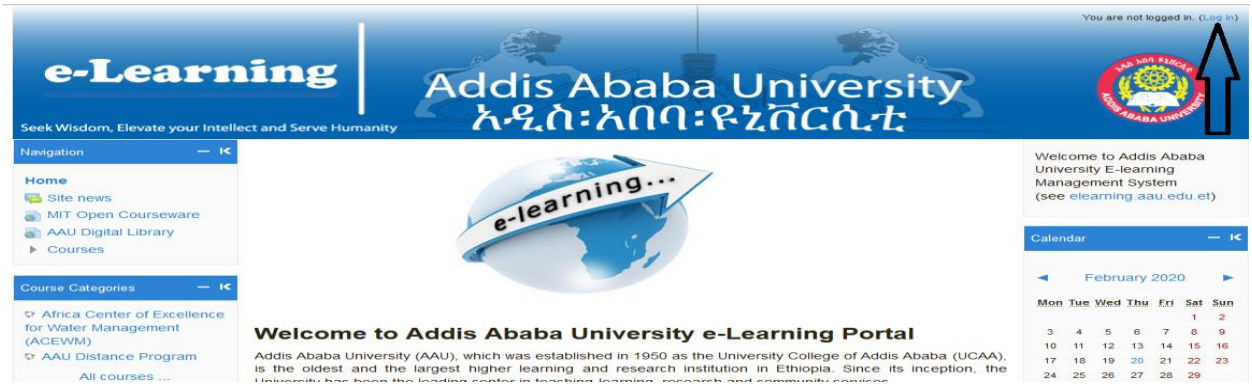
AAU eLearning site



Login



Log in to e-Learning Platform

Step1

Click the log in on the right corner of the page (see the picture above)

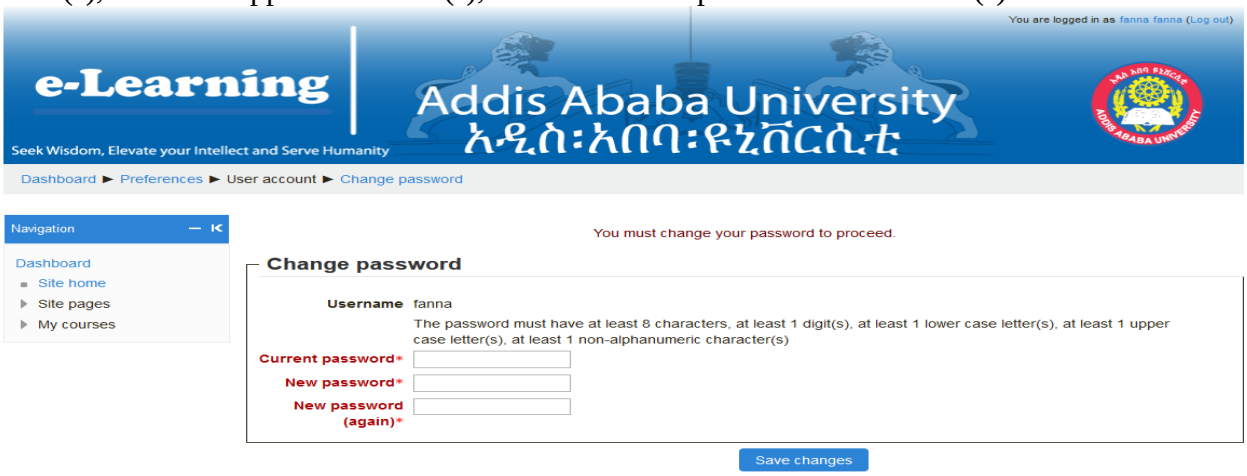
Step2

Enter your name and default password which get from your department on the username and password section then enter login. (see the picture below)

Step3

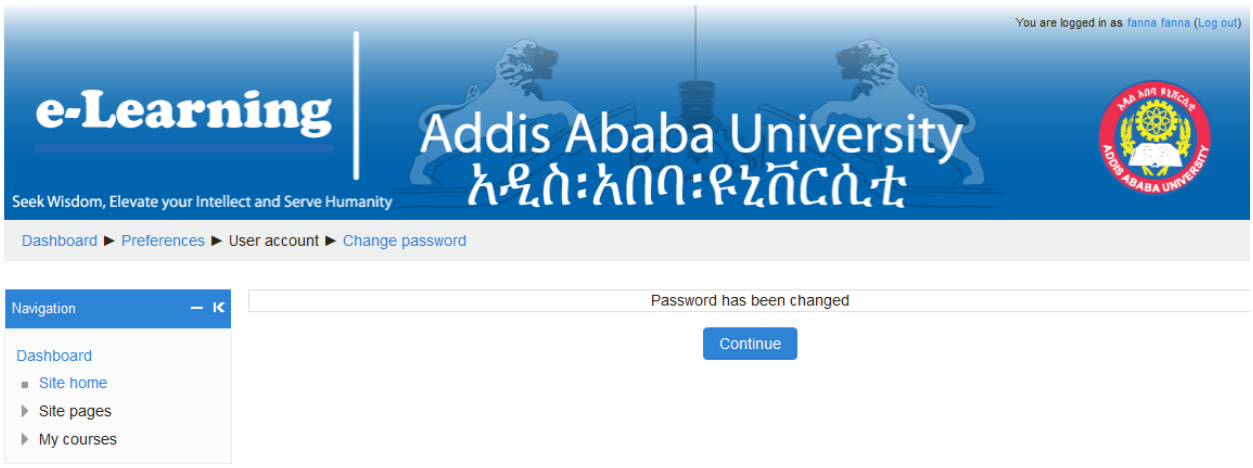
The system will ask you to enter your unique personal new password, first enter your old password (get from your department) then your new password finally confirm your new password and enter save changes. (see the picture below)

N.B The new password must have at least 8 characters, at least 1 digit(s), at least 1 lower case letter(s), at least 1 upper case letter(s), at least 1 non-alphanumeric character(s)



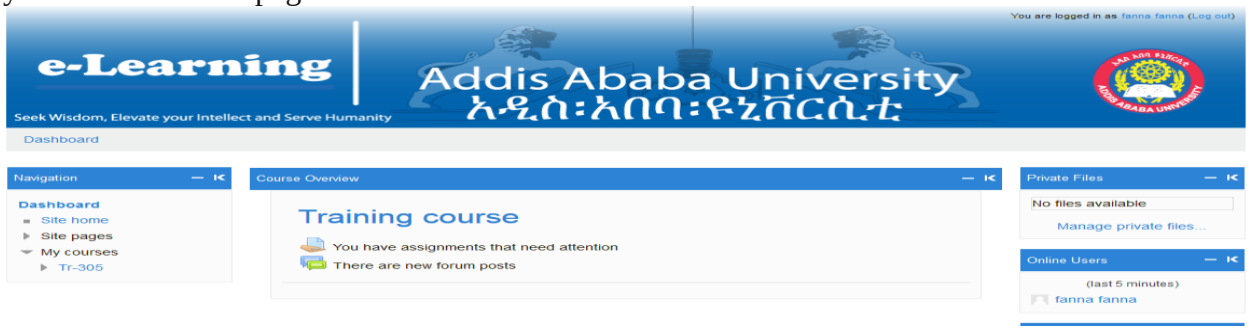
Step4

The system confirms you that your old password changed to the new one, then click continue (see the picture below)



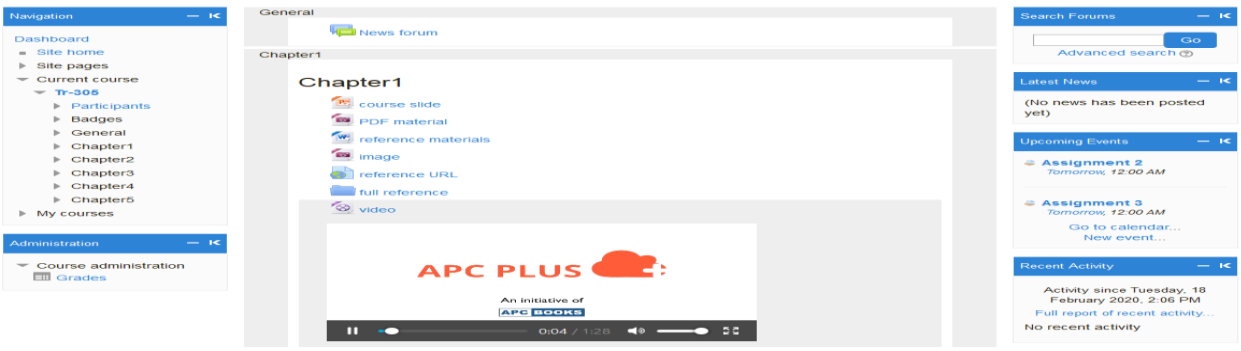
Step5

Log out and login (at the right top corner) with the new password then the system leads you to your list of courses page.



Step6

Choose and participate to any of your courses (download contents, see and submit Assignments, Chat, Quiz, Forum……)



Step7 Please secure your passwords and don't forget to log out after you done.

Appendix O: E-Learning Training Guide Manual For Teachers

AAU e-Learning Guide manual
For Teachers

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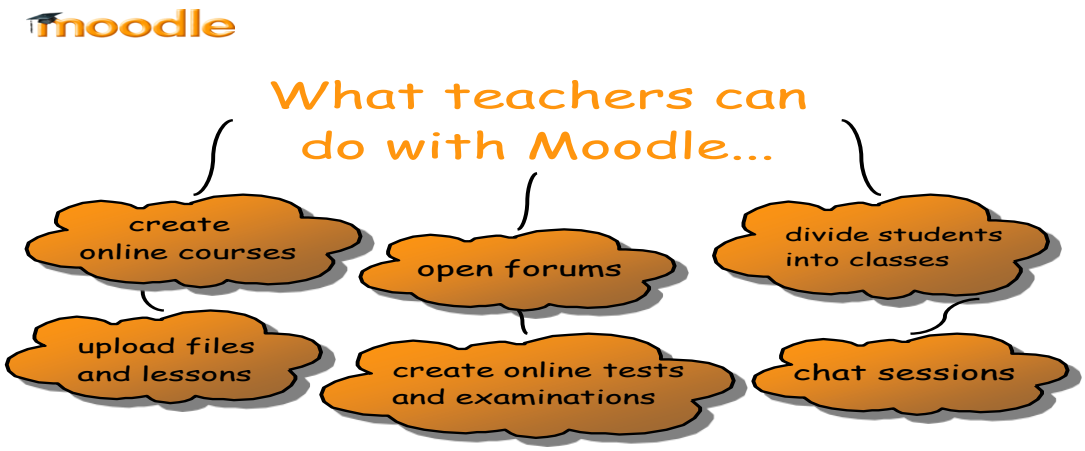
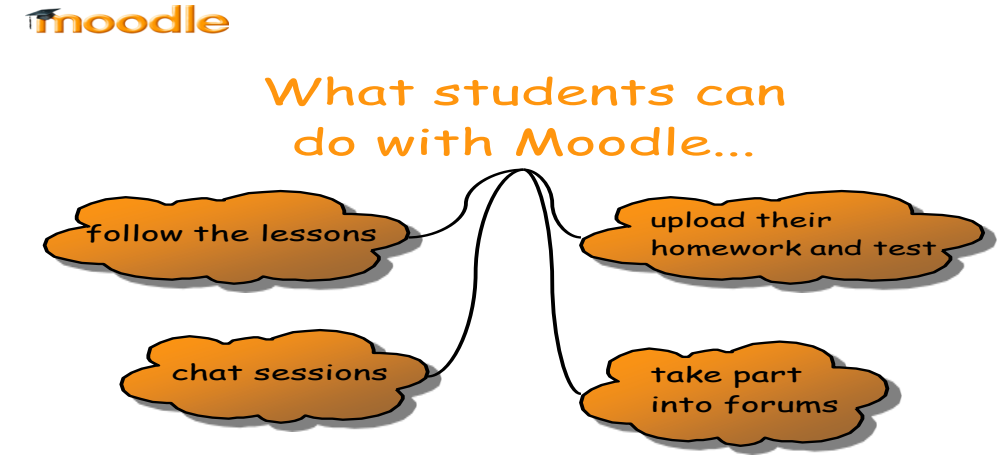




http://elearning.aau.edu.et

AAU eLearning site

Roles

e-Learning portal roles facilitate controlling what a user can and cannot do within e-Learning and within Moodle courses. e-Learning administrators have the ability edit the permissions and capabilities of roles and create new roles. Student and teacher are the most commonly used roles.

Guest role – Guests have minimal privileges. They can view course activities but cannot enter text anywhere. As with all other roles, Guests are required to log in to portal before they access a course.

Student role – Students generally have fewer privileges than teachers within a course. They can submit assignments for grading, make posts to forums, and generally participate in a course. Students cannot edit any of the course settings and cannot use portal Quick mail feature to send mail to an entire class. Students see their own grades only.

Non-editing teacher role – This role cannot add activities or resources, but can view and edit grades.

Teacher role – Teachers can do anything within a course, including changing the activities and grading students.

Authenticated user role - By default, authenticated users have permission to edit their own profile, send messages, blog and do other things outside of courses.

Course creator role – This role can create a course, assign Teachers, plus have all the privileges of a Teacher.

Administrator role – Administrators can do almost anything and go anywhere. It is recommended that there are one or two people with the administrator role.

LOGIN

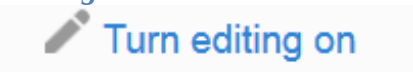
You must be logged in in order to edit a course and use most of the features described below.

Basics

The course settings page offers the teacher many controls. These include who can come into the course, how the course is laid out and other potential functions.

Most course homepage formats are broken into course sections. Resources and activities are added to each section.

Editing course section



To add or alter activities or resources a teacher must use the "Turn editing on" button on the course homepage. The same button will also turn editing off. Similarly, the "switch role to" button allows the teacher to see the course page as a student, guest and non-editing teacher would see it.

To add items to a section, you will use the pull down boxes for activities and resources.

Add or remove topic/week sections in e-Learning course

Topic sections are the large content zones on the main page of each eLearning course. You can accommodate the amount of content in your course by reducing or increasing the number of the sections that are shown (5 by default).

In the **'Settings'** block, choose **Edit settings** under **Course administration**.

In the **General** settings area, scroll down until about the middle of the box. Once there, use the **Number of weeks/topics** dropdown to select how many sections or weeks there will be in the course.

When finished, click the **Save changes** button at the bottom of the page.

Changing topic titles

1. Click **Turn editing** on in the top right of your course page**.**

2. Go to the topic area that you want change and click the cog icon.
3. In the Summary page uncheck the **'Use default section name'** box.
4. In **Section name** enter the name of your topic
5. In **Summary** you can also enter a short summary of what this topic area contains (this is optional).
6. Click **Save changes** at the bottom of the page.

Resources

e-Learning portal supports a range of different resource types that allow you to include almost any kind of digital content into your courses. These can be added by using the add a resource dropdown box when editing is turned on.

Book
File
Folder
Page
Url
Etc..

Adding resource

1: Select the Course you want to upload to
2: Turn Editing On

Add a resource

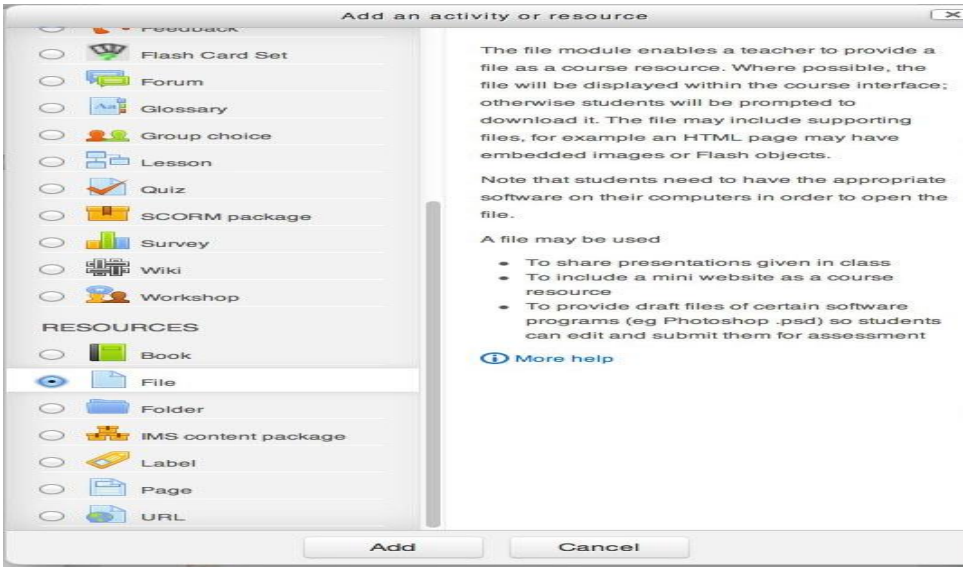
You will now see the layout has changed. Here you can edit individual sections- called "topics". To edit the name of a Topic, press the Gear Cog Icon under the topic's name. In the Topic's box that you want to upload a document, link, or assignment to, press Add an activity or resource.

Select the type of resource

The box will pop up, where if you scroll down on the left side will bring you to the resources menu. Select the type of resource and press add.

Add details about the file and finish

At this step, you can name the file, add a description to that file and lastly, upload it. After you can either Save or return to course or Save and display, which would allow you to see the file as you've uploaded it.



Activity

There are a number of robust interactive learning activity modules that you may add to your course with the "Add an activity" drop down menu.

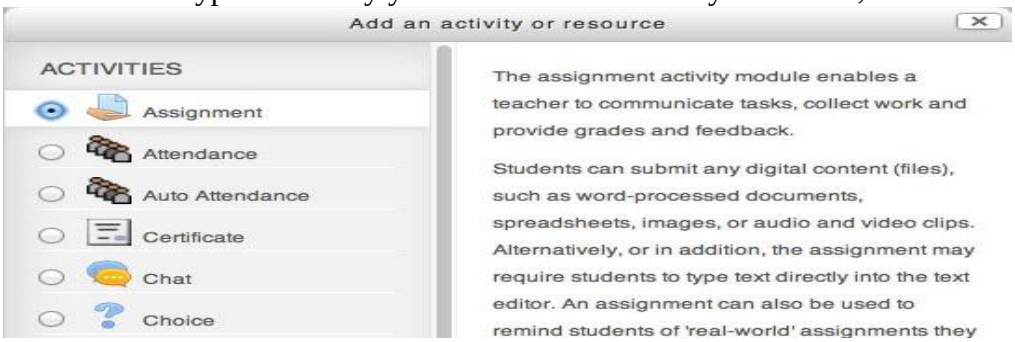
Assignment
Forum
Quiz
Glossary
Wiki
Etc..

Adding activities

Adding activities works much the same way as adding resources.

1. Once editing is turned on, choose **Add an Activity or Resource**.

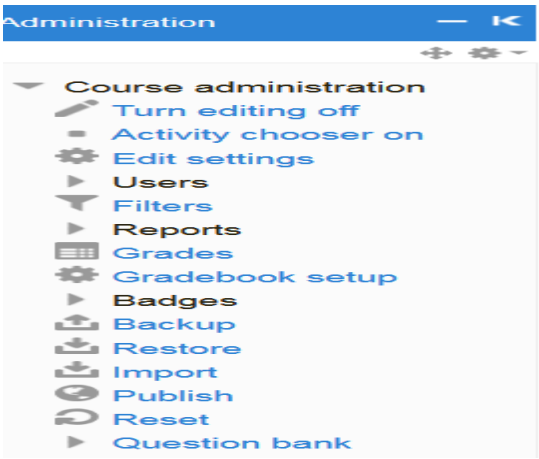
2. Choose the type of activity you would like to add to your course, such as an Assignment.



Blocks

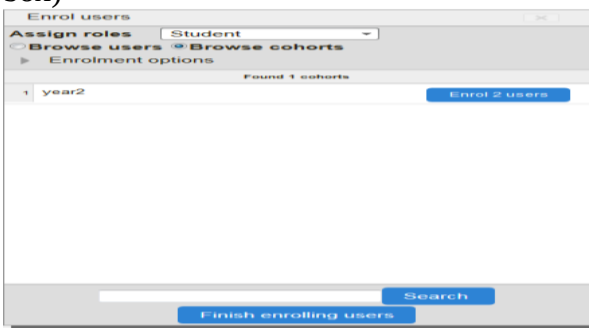
Course administration block

A teacher with editing rights will also have a course administration block. This is an important tool for a teacher. It has sub menus for course: backup, restore, Assign roles, grades, activity logs/reports, Files and the useful Course settings.



Enrolling student

Go to *Administration* > *Course administration* > *Users* > *Enrolled users*
Click the 'Enroll users' button at the top right or bottom left of the page
Use the 'Assign roles' dropdown if you wish to change the role
Select enrolment options as appropriate
Browse cohort (site-wide groups) and Browse users or search for the user. (Note that when searching for users, exact matches are listed first.)
Click the Enroll button opposite the user. The user will indent in the list and the enroll button will disappear, indicating that the user is enrolled.
When you have finished, click the 'Finish enrolling users' button (or simply close the enroll users box)



Appendix P:Trainee Instructor's Certificate (Main Study)

NILE ONLINE

This is to certify that

[redacted]

completed the following
60-hour NILE Online course, with final assignment:

Trainer Development

Assignment Grade: Pass

from 8th April 2024 to 12th June 2024

Thom Kiddle
Director, NILE

NILE
PART OF THE INTO GROUP

Norwich Institute for Language Education
NILE, 78-80 Upper St. Giles Street, Norwich, NR2 1LT, United Kingdom
DELTA Language Training & Consultancy Ltd. Registered office: 1 Gloucester Place, Brighton, BN1 4AA No. 2976005

MEMBER ENGLISH UK
Accredited Member AQUEDUTO
Aligned to the Cambridge English Teaching Framework
Eaquals
Formally aligned to the Eaquals Framework for Language Teacher Training & Development

Appendix Q: Reading Comprehension Course Plan for the Two Groups (Main)

Groups	Section	Time	Room and Block	Remark
Control	A	Wednesday : 8:00-9:50 am Monday: 1:30-2:20 pm	BE-OB-R-329	Lessons were presented in conventional (F2F) approach
	B	Thursday: 10:00-11:50 am Friday:1:30-2:20 pm	BE-OB-R-30	
Experimental	C	Friday : 8:00-9:50 am Wednesday 1:30-2:20 pm	BE-OB-R-29	Online lessons were used on Wednesday's and Thursday's class every week.
	D	Wednesday 8:00-9:50 am Thursday: 2:30-3:20 pm	BE-OB-R-34	

Appendix R: Activity Plan for the Twelve Weeks of the Main Study

Weeks	Teaching Pedagogy Activities	Groups	
		Experimental	**Control**
One and Two	Introducing the purpose of the study and Participants signing consent form	√	√
	Background survey	√	√
	Pretest	√	√
	Exploring LMS/Moodle through training	√	
Three and Four	**Introducing the course syllabus**	√	√
	Introduction	√	√
	Reading for Study	√	√
	Purposes for reading Pre-reading activities (Activity 1.3.1)	√	√
Five	while reading comprehension questions (Activity 1.3.2) post reading comprehension activities (Activity 1.3.3)	√	√
Six	Health and Fitness Pre-reading activities (Activity 2.3.1)	√	√
Seven	While reading activities (main idea, reference questions, Guessing meaning from context (vocabulary questions) (Activity 2.3.1and Activity 2.3.2) Post reading activities (Activity 2.3.3)	√	√
Eight	Reading: The Awramba Community Pre-reading questions (Activity 3.4.1)	√	√
Nine	while reading and post reading activities (Activity 3.4.2 and Activity 3.4.3)	√	√
Ten	Reading: Africa's Wild Animals Pre-reading questions (Activity 4.2.1) While Reading Comprehension questions (Activity 4.2.2)	√	√
Eleven	Vocabulary: Denotative and Connotative meanings (Activity 4.3.1) Post-test	√	√
Twelve	Attitude Questionnaire	√	
	FGD	√	

Appendix S: Criteria for Classifying the Pre-posttest Reading Comprehension Questions

According to King, C.M., and Stanley, L.M. (2004: 8), reading comprehension skills has five components contained in reading texts that may help the students in comprehending a text. They are:
A. Finding factual information,

B. Finding main idea,

C. Finding the meaning of vocabulary in the context,

D. Identifying reference, and

E. **Making inference.**

A. Finding factual information

Factual information requires the readers to find specific details. The factual information question is generally prepared for students and those which appear with WH question word. There are many types of questions: reason, purpose, result, time, comparison, etc. in which of the answer can be found in the text.
B. **Finding main idea**

Recognition of the main idea of a paragraph is really important because it helps the readers not only understand the paragraph on the first reading, but also helps the readers to remember the content. The main idea of a paragraph is what the paragraph develops. The main idea of a paragraph tells the topic of the paragraph. The topic tells what all or most of the sentences are about.
C. **Finding the meaning of vocabulary in context**

It means that the reader could develop his or her guessing ability to the word which is not familiar with him or her by relating the close meaning of unfamiliar words to the text and the topic of the text that is read. The words have closed meaning or nearly the same meaning as another word.
D. **Identifying references**

In English, as in other languages it would be boring to have and repeat the same word or phrase every time. Instead of repeating the same word or phrase several times, after it has been used we can usually refer to it than repeating it. For this purpose we use reference words. Recognizing reference words and being able to identify the word to which they refer to will help the reader understand the reading text. Reference words are rarely and very frequently pronoun such as: she, he, it, etc.
E. **Making inferences**

Inference is a skill where the reader has to be able to read between the conclusions of the text. A reader determines what is important when he or she is reading as the **reader differentiates between the key ideas and less important inform**ation in the text.

Appendix T: Background Information Questionnaire Results for Both Groups (Main)

Age and Gender of the Respondents (Control Group)

Age	Frequency	Percent	Gender	Frequency	Percent
17-20	38	90.48	Female	24	57.14
21-24	4	9.52	Male	18	42.86
Total	42	100.0	Total	42	100.0

Questionnaire results for the <u>Experimental Group</u>

Gender	Frequency	Percent	Age	Frequency	Percent
Female	23	54.76	17-20	37	88.10
Male	19	45.24	21-24	5	11.90
Total	42	100.0	Total	42	100.0

Do you have personal computer or smartphone?

	Frequency	Percent
Yes	42	100.0

How can you describe your skill of using a computer or Smartphone?

	Frequency	Percent
poor	3	7.14
moderate	11	26.19
good	18	42.86
very good	6	14.29
Excellent	4	9.52
Total	42	100.0

How much experience do you have using social media like Google Docs (Drive), Facebook, YouTube, Twitter, email, telegram, Instagram, tiktok etc. for academic purposes?

	Frequency	Percent
None	0	0
less than a year	6	14.29
one to two years	14	33.33
more than two years	20	52.38
Total	42	100.0

Which social media do you regularly use for academic purposes?

	Frequency	Percent
Google Docs (Drive)	8	19.05
YouTube	19	45.24
Telegram	15	35.71
Total	42	100.0

Appendix U: Pre-posttests Raw Scores for both Groups (Main)

Group	Components											
Control Group	Main Idea		Factual Information		Vocabulary		Making Inferences		References			
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Total % for Pretest	Total % for Posttest
C1	3	3	8	8	7	7	8	7	2	2	80.00	77.14
C2	2	2	7	7	7	7	7	7	2	2	71.42	68.57
C3	3	2	8	7	8	7	6	7	2	2	77.14	74.28
C4	3	3	7	8	7	6	6	7	2	2	71.42	74.28
C5	3	2	7	7	6	7	6	6	3	3	71.42	71.42
C6	2	3	8	7	7	8	7	7	3	2	77.14	77.14
C7	3	3	8	8	7	7	8	7	3	3	82.85	80.00
C8	3	3	7	8	7	8	7	7	3	2	77.14	80.00
C9	3	3	8	7	7	7	7	7	2	3	77.14	77.14
C10	3	3	7	8	8	8	8	8	2	2	80.00	82.85
C11	3	3	8	8	7	7	7	6	2	3	77.14	77.14
C12	3	3	8	8	8	8	7	8	2	2	80.00	82.85
C13	3	3	8	8	7	7	6	7	3	3	77.14	80.00
C14	3	3	7	7	7	7	6	7	3	2	74.28	74.28
C15	2	2	7	8	8	8	7	7	2	2	74.28	77.14
C16	3	3	8	8	7	7	8	7	2	3	80.00	80.00
C17	3	3	8	8	7	7	6	7	2	2	77.14	77.14
C18	3	3	8	8	8	8	8	7	2	3	82.85	82.85
C19	2	3	7	7	7	8	7	7	3	2	74.28	77.14
C20	3	4	8	8	8	7	7	7	3	3	82.85	82.85
C21	3	3	8	8	7	8	7	7	3	3	80.00	82.85
C22	3	3	8	8	7	7	7	8	2	2	77.14	80.00
C23	3	3	7	8	7	6	7	7	2	2	74.28	74.28
C24	3	3	8	8	7	8	8	7	2	2	80.00	82.85
C25	3	3	7	7	6	6	7	7	2	2	71.42	71.42
C26	3	3	7	8	6	8	7	6	3	2	74.28	77.14
C27	3	3	7	8	7	7	8	7	2	3	77.14	80.00
C28	3	3	8	7	8	7	7	7	2	3	80.00	77.14
C29	3	4	8	8	8	8	8	6	2	2	82.85	80.00
C30	3	3	8	7	7	8	7	7	2	2	77.14	77.14
C31	2	2	7	7	6	7	7	7	2	2	68.57	71.42
C32	3	3	7	8	8	8	7	7	2	2	77.14	80.00
C33	3	2	8	7	7	7	7	8	3	3	80.00	77.14
C34	3	3	7	7	6	7	7	7	2	2	71.42	74.28

C35	3	2	7	7	6	7	6	7	2	2	68.57	71.42
C36	3	3	8	8	8	7	7	8	2	2	80.00	80.00
C37	3	3	7	8	8	7	7	7	2	2	77.14	77.14
C38	2	2	7	8	7	7	7	6	2	2	74.28	71.14
C39	3	3	8	8	7	8	7	7	2	2	77.14	80.00
C40	3	3	7	6	6	7	7	7	2	2	71.42	71.42
C41	3	4	7	8	7	8	8	7	3	2	80.00	82.85
C42	3	4	8	7	7	8	7	6	2	2	77.14	77.14

Group	**Components**											
Experimental Group	**Main Idea**		**Factual Information**		**Vocabulary**		**Making Inferences**		**References**			
	Pretest	**Posttest**	**Pretest**	**Posttest**	**Pretest**	**Posttest**	**Pretest**	**Posttest**	**Pretest**	**Posttest**	**Total % for Pretest**	**Total % for Posttest**
E1	3	4	7	8	7	8	8	8	2	2	77.14	85.71
E2	3	2	7	7	7	8	4	7	3	3	68.57	77.14
3E	4	4	8	8	6	7	8	8	2	3	80.00	85.71
E4	3	4	6	8	7	8	7	7	2	2	71.42	82.85
E5	3	4	8	8	7	8	5	6	3	2	74.28	80.00
E6	3	4	7	8	7	8	8	8	3	3	80.00	88.57
E7	3	3	8	9	8	8	5	6	3	3	77.14	82.85
E8	2	3	8	8	7	8	8	7	2	3	77.14	82.85
E9	3	3	8	8	8	9	5	6	2	2	74.28	80.00
E10	3	3	9	9	8	8	6	7	2	3	80.00	85.71
E11	3	4	8	9	7	7	7	7	3	3	80.00	85.71
E12	3	4	8	8	8	8	6	6	2	3	77.14	82.85
E13	3	3	8	9	7	8	8	8	2	3	80.00	88.57
E14	3	3	7	7	8	7	5	8	2	3	71.42	77.14
E15	3	4	7	8	7	8	7	8	2	2	74.28	85.71
E16	3	3	8	9	8	8	7	8	2	2	80.00	85.71
E17	2	3	8	9	7	7	7	8	2	2	74.28	82.85
E18	3	4	7	8	8	9	8	8	2	2	80.00	88.57
E19	3	4	7	8	7	9	6	7	2	3	71.42	88.57
E20	3	3	8	8	6	8	8	8	3	3	80.00	85.71
E21	3	4	8	8	9	8	4	6	3	3	77.14	82.85
E22	3	4	7	8	7	8	8	8	2	3	77.14	88.57
E23	3	4	8	9	5	7	6	7	3	3	71.42	85.71

E24	3	4	8	8	8	9	8	8	2	2	82.85	88.57
E25	3	3	7	8	6	7	6	7	2	2	68.57	77.14
E26	3	3	7	7	7	7	7	8	2	3	74.28	80.00
E27	4	4	8	8	7	8	7	8	2	3	80.00	88.57
E28	3	3	7	8	8	8	7	7	2	2	77.14	80.00
E29	3	4	8	8	7	8	8	8	3	3	82.85	88.57
E30	3	3	8	8	8	8	7	8	2	3	80.00	85.57
E31	3	3	7	8	6	7	7	7	2	2	71.42	77.14
E32	3	3	7	7	7	8	7	8	2	2	74.28	80.00
E33	3	4	8	8	7	8	6	7	3	3	77.14	85.57
E34	2	3	7	7	6	7	6	8	2	3	65.71	80.00
E35	3	3	8	8	7	8	6	7	2	2	74.28	80.00
E36	3	4	8	8	8	8	7	8	2	3	80.00	88.57
E37	3	3	8	9	8	8	8	8	2	2	82.85	85.57
E38	3	3	8	8	6	7	6	8	2	3	71.42	82.85
E39	3	3	8	8	7	8	8	8	2	2	80.00	82.85
E40	4	4	7	7	6	7	6	7	2	3	74.28	80.00
E41	3	4	7	8	7	8	7	8	3	3	77.14	88.57
E42	3	3	8	8	8	8	7	8	3	3	82.85	85.57

Appendix V: Focus Group Discussions Transcript

Time of discussion: 3:30- 5:30 Morning (Local time)
Date of discussion: January 15, 2024
Location: College of Business and Economics (Old Class Room No. 29)
Moderator: The researcher
Number of Participants: 8

M= Moderator, P= Participant Ps= Participants

Moderator: After engaging in a blended learning technique for 12 weeks while taking the Communicative English Skills I course, you may have personal opinions about English-language reading activities. It is advised that you feel free to speak plainly and briefly during this interview. This interview has only been used to conduct research. I respect your right to privacy, and you are not obligated to tell me who you are.

Thank you for your voluntary participation in this study.

Purpose of the Discussion

M: Today, we will talk about your experiences and the challenges you have had when using blended learning for reading instruction. The goal is to compile your opinions regarding your strategy and the difficulties you encountered when applying this method to your reading process. My purpose is not to impart knowledge or share my views; your observations are more important. No response is considered better or worse, nor are there any rights or wrong answers. You are welcome to express different views and to change your viewpoint. I want you to feel free to share your feelings and opinions.

Discussion Procedures:

During our discussion, I will be taking notes and recording the conversation to ensure I capture all your thoughts. These procedures were explained when we scheduled this meeting, and it is important to note that everything discussed will remain confidential. The aim is to have an open group discussion, so feel free to contribute without waiting to be called on. However, it would be

helpful if only one person speaks at a time. The discussion is scheduled for about an hour and half, and I may guide the conversation to cover all the topics I have.

M: Do you think that the blended approach helped you with your reading comprehension? Why or why not?

P1: All right! Our reading skills have been upgraded. We have added new things in our reading. We have been communicating each other. We understand how blended learning can be used.

Probing: You said that BL helped you to improve your reading skill. Could you explain it?

P1: yes, it helped us. I liked the teamwork part. Reading and watching the texts and videos online and then discussing them in class opened my eyes to new ideas, improved my understanding, and stimulated my critical thinking because it helped me to do my learning based on my schedule.

P2: Ok, the BL helps us to improve our reading. Because of works platform have a collaboration to comment what I need from my friends. It helped us to collaborate each other; it helps us to improve our reading skill. That is it.

P3: Like they said, BL have role to improve our reading. Before we read using BL, we get different videos that are important in developing our reading comprehension. It also made our reading enjoyable because of different ways that the blended learning combined. It also improved how to approach texts to answer different reading comprehension questions.

P4: yes, I think so. Because I found the activities associated with various resources interesting; I can easily brainstorm ideas from internet. I was very interested on the videos that are related to reading.

P5: For me, it was helpful. It helped me to get feedback from my friends. Especially when I read with my group, it was helpful to discuss the general idea of the reading passage.

M: What were the advantages you obtained from BL-based reading comprehension?

P4: It was helpful to collaborate with my classmates especially when we were in forums and chats, we have raised different issues. It made the reading lessons interesting. I believe the

blended method, which combined traditional and internet resources, had improved my reading comprehension. The online materials allowed me to interact with varieties of content, and I could get clarification on any questions during the face-to-face class. So, for me combining the two inspired me to read.

Probing: Do you agree with her idea?

P3: Yeah… I agree. We were sharing ideas through group reading. It was simple to communicate my thoughts. Mixing the online and offline interested me. In addition, having the opportunity to read at my own pace was great; it gave me ownership of my learning process. It helps to express freely and we can communicate without space and time limitation.

P1: as I mentioned before, BL helps me to Read and watch texts and videos online and then discussing them in class. I have done the activities and watched the videos based on my program. We exchanged comments online through forums and chats were also interesting. We generated ideas from different angles and finally combined our ideas. So, Ehhhhh… our interaction has improved.

P8: It made learning easier enjoyable for us to communicate well with one another. We were given a range of materials when we employed blended learning, and I believe that a diversity of resources that cater to different learning styles makes the approach engaging. Personally, I enjoy the approach since, as my friend previously stated, it makes it easier to complete and view tasks related to reading. I find that the method help me learn things more effectively.

P7: Ok, thank you so much. As we all know, these days, technology is a key factor in the transformation of the world into a single community. So that we can use technology to obtain and share knowledge from around the world, and it also saves time. Through discussion forums and chats, we were exchanging thoughts on issues related to reading online. It was easy to express my ideas. I found it interesting to combine online and offline. It was also fantastic to be able to read at my own pace because it allowed me to take charge of my education. It facilitates freedom of expression and allows us to communicate without regard to time or location constraints.

P2: I think online material access was very flexible and changed my learning style. Since it has improved my understanding and given me the freedom to review the reading materials whenever it is convenient for me. Of course, a variety of resources like interactive forums, chats, and quizzes—as well as e-books, YouTube videos, Google Docs, and other documents helped me to develop my reading comprehension.

P5: It helped us to have good interaction among ourselves. Again, we got different resources when we used the blended learning, and that I think a variety of resources that touch to various learning preferences make the method interesting. I personally like the method because it helps to do and watch activities and videos based on my program as my friend said earlier. I personally learn better if I get my lessons visually.

M: What did you like the most about BL?

P2: Like I said before, I like the plat form because it is comfortable to use when I was out of campus, and it is also useful to submit assignments online without using the hard coy that minimizes our photocopy cost. Ehhhh…when we participate in online discussions, it helps us to participate actively.

P3: What I like most from this learning method was that it helped me to be a responsible learner because to do the reading activities, I have to budget my time without the presence of my instructor.

Probing: Is there any other benefit you like?

P3: Yes, of course, I also like the videos that are related to address different reading techniques that increased my engagement into the passages and activities.

P6: Thank you for having me. As my friends already said, in addition to being convenient for submitting assignments online without a paper copy, which lowers our copying expenses, I enjoy the platform because it is easy to use while I'm not on campus. Oh, yes, it is beneficial for us to actively participate in internet forums.

P4: Emmm…. I like the platform because it increased my interest to read and discussed different issues related with reading with my friends. I also like its availability for everywhere. I also liked it because it mixes the two approaches.

P5: I am sorry I forgot the question; can you repeat it to me?

Probing: Ok, here is the question, what did you like the most about BL?

P5: Thank you. Reading was difficult for me. I could not focus when I have read. But, this method helped me to get attention to my reading and the videos helped me a lot to understand the reading passages.

Probing: You mean, the method has made you think differently about how hard reading was.

P5: Yes, my thought has changed because of this method and for me experience and training is important to get a better benefit.

M: What were the challenges you observed from this type of learning?

P2: when I was out of dorm, I cannot use it because it works with internet connection, it needs data charges and I cannot buy the data.

P7: Ok, for me, the blended learning associated with using digital tools and F2F approach noted having trouble adapting to new technologies. Time management was a significant concern in order to manage both the online and offline components, which led to problems meeting deadlines and managing multiple responsibilities.

P5: The technical problems were a big obstacle for me. We encountered challenges during the blended reading courses, including connectivity issues and internet speed even, ehhh... I forgot my password in the middle, and also I saw some students who did not have enough computer skills so these were some of the difficulties we faced during the program.

P6: Thank you. The challenges I have had in my reading comprehension process, which initially frustrated me, are technical and connectivity-related.

P1: Technical problems and connectivity issues are the problems that I have encountered in my reading comprehension process, which lead me to frustration at the beginning.

P2: Yeah, as he said using the features and understanding the BL interface initially created a challenge for me.

Probing: Like what?

P2: Like how to change the given password and get into the activities.

P5: I need more face-to-face classroom interaction with my classmates and instructor that the blended learning Approach offers. But it was not properly implemented.

P7: It was difficult to maintain a balance between the traditional and digital resources. Our tendency to feel as though we were managing a lot of things at once was stressful.

P8: Well, in my opinion, the blended learning method that involved both face-to-face interaction and the use of digital tools was connected with difficulties adjusting to new technologies. In order to handle both the online and offline components, time management was a major difficulty for me. This stressed me in issues managing various duties and meeting deadlines.

Probing: Do you mean that using both the face-to-face and online approach requires effecient time management?
Ps: All discussants say "Yes".

P3: as the previous speaker told us it is difficult to balance both the offline and online activities on time within blended learning contexts. Meeting due dates and combining a number of duties requires efficient time management skills.

P1: The function of each buttons and each category should be clear for students. There should be clear steps how to use each pages. How each page can be accessed? Extensive training should be given for students.

M: What do you recommend in using blended learning (BL) in your learning of reading skills?
P4: As we mentioned…… giving intensive training is very important because some of us have a problem of technology.

P7: Since the e-learning is user-friendly and accessible from anywhere, I advise all students to use it for their group projects and reading assignments. However, we should be given some guidance on how to use the platform, including how to launch it and what it includes. In addition, in order to address the interests of the students, teachers should also employ both strategies properly.

P5: Improving the technological infrastructure is very important, and for a successful learning process, equipment, and reliable internet access are necessary.

P1: Deep training on the use of the software should be given for students. Students should also use their time wisely. Instructors should also actively participate.

P2: I recommend all students to use this platform to use it to do their reading assignments and group works because it is easy to use and can access everywhere. But students should receive some instruction on how to operate the software, including how to begin it and what it consists of.

P6: As I previously stated, the issues with connectivity and the internet should be resolved. Additionally, each button's and category's purpose of the platform should be clear to us. Clear instructions on how to use each page should be included. We should receive a great deal of instruction on how do we get to each page.

P3: Offering detailed guidance on the digital resources utilized in blended learning can have a major impact because students could adjust more readily if they were given clear instructions and tutorials.

P1: let me add one thing.

Probing: Go on please.

P1: It is also important to allow every student access to the links on each page. The pages can be then easily used by the students. All links on each page should be accessible to all students. Students can utilize each page easily.

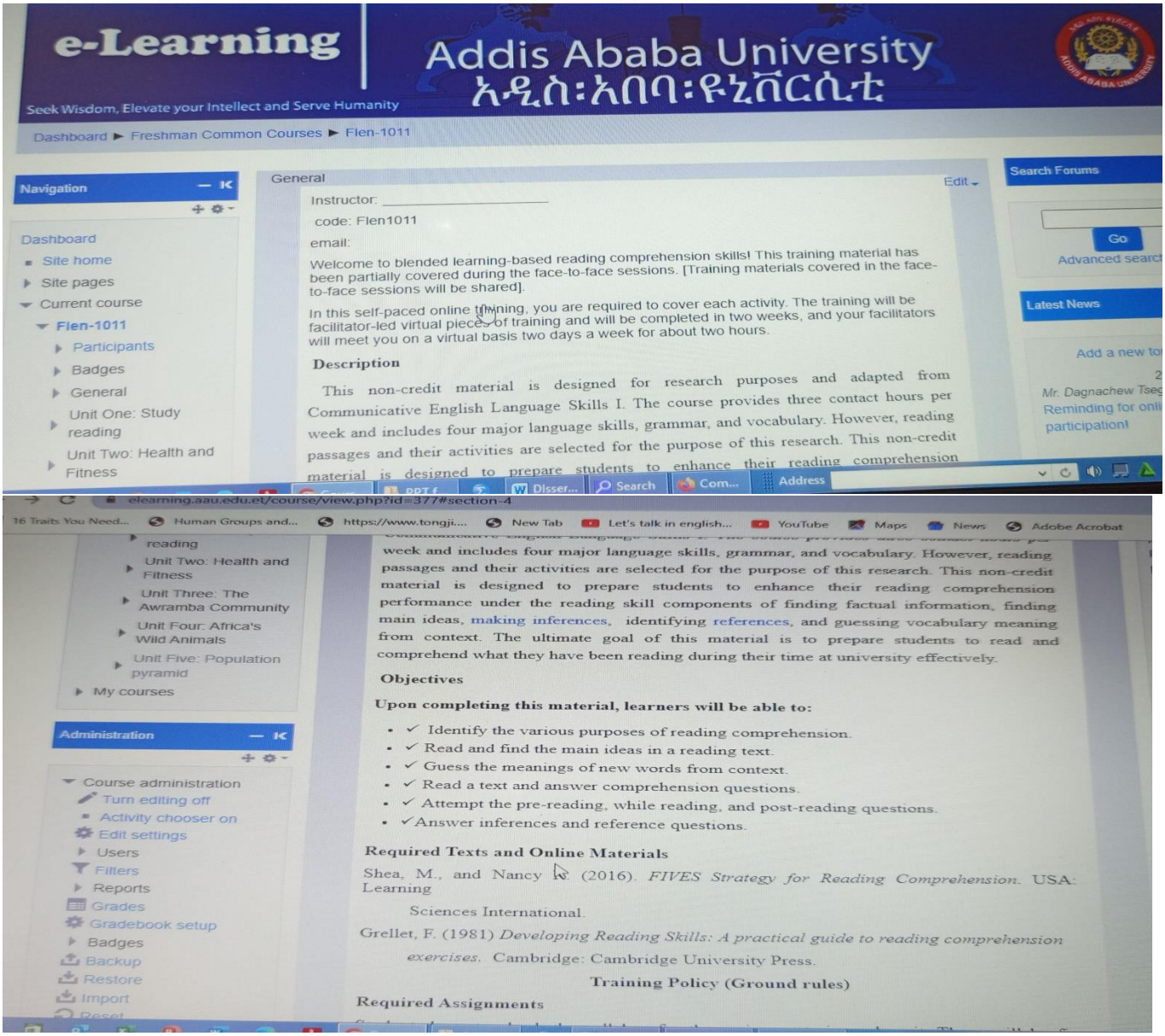
Probing: Would you like to add anything more?

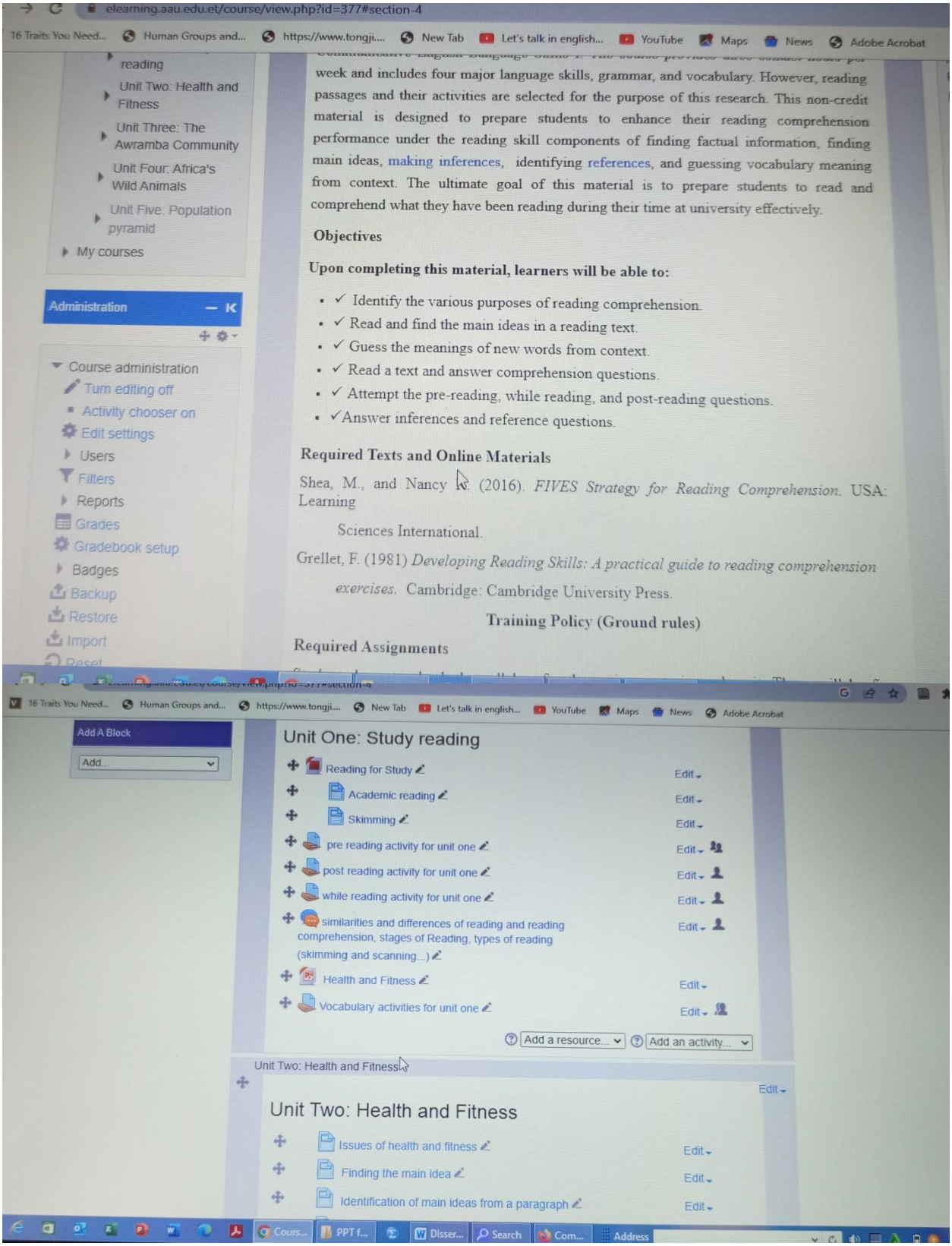
P2: No, I think we have mentioned many issues.

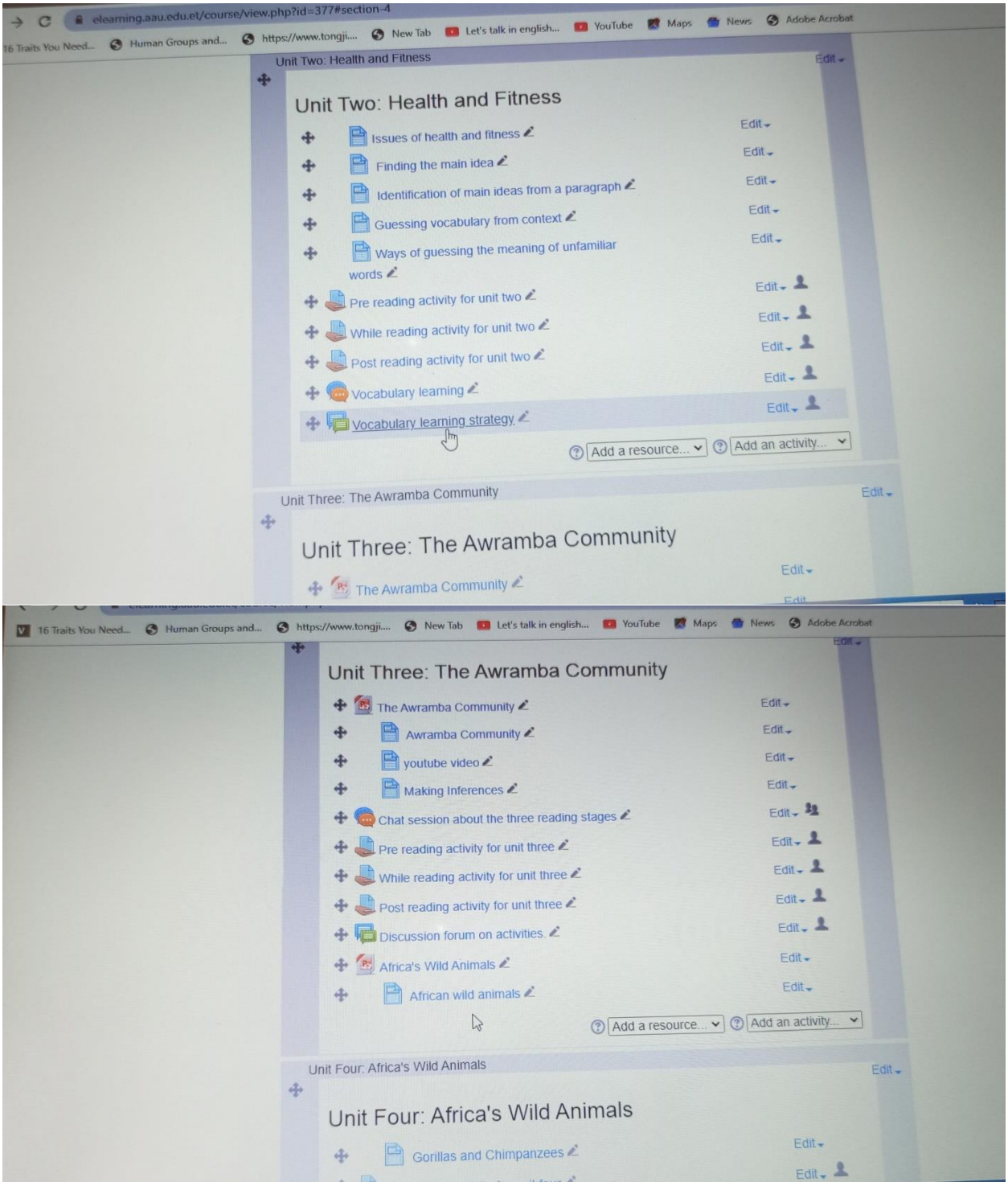
M: You mentioned that there were a variety of viewpoints regarding the benefits you get and the difficulties you encountered when implementing blended learning to teach reading. I really appreciate your presence this afternoon. Thank you very much for your time, and I really value your reflections.

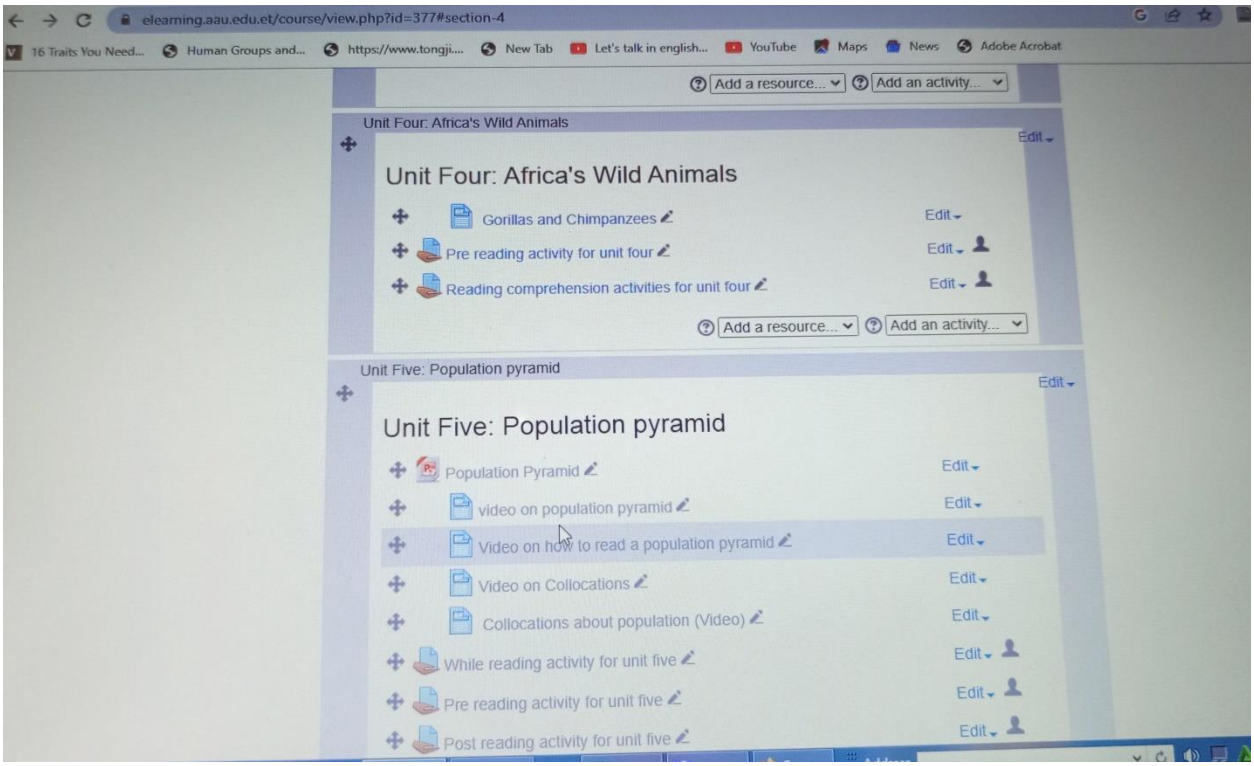
Ps: clapping… clapping…

Appendix W: Sample Interfaces of the Course

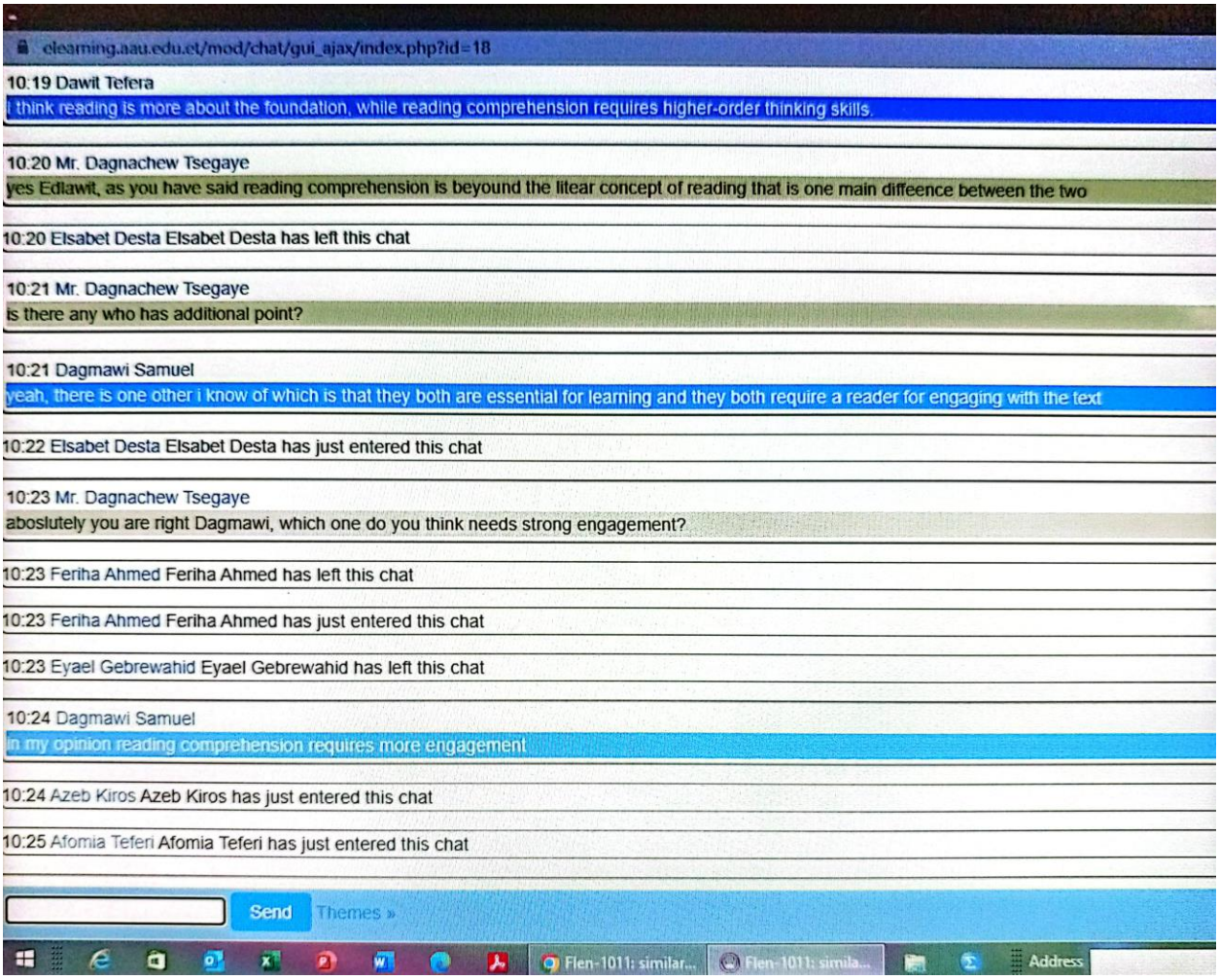


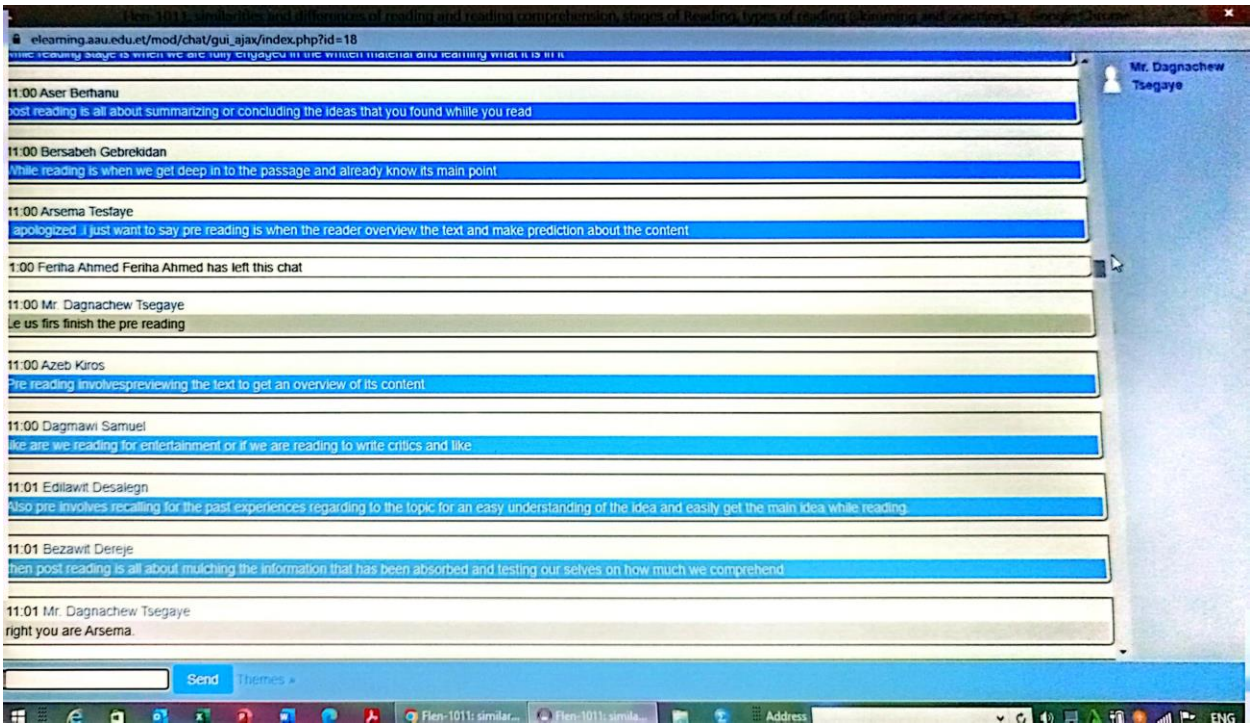

elearning.aau.edu.et/course/view.php?id=377#section-4
16 Traits You Need... Human Groups and... https://www.tongji.... New Tab Let's talk in english... YouTube Maps News Adobe Acrobat
reading
Unit Two: Health and Fitness
Unit Three: The Awramba Community
Unit Four: Africa's Wild Animals
Unit Five: Population pyramid
My courses
Administration
Course administration
Turn editing off
Activity chooser on
Edit settings
Users
Filters
Reports
Grades
Gradebook setup
Badges
Backup
Restore
Import
week and includes four major language skills, grammar, and vocabulary. However, reading passages and their activities are selected for the purpose of this research. This non-credit material is designed to prepare students to enhance their reading comprehension performance under the reading skill components of finding factual information, finding main ideas, making inferences, identifying references, and guessing vocabulary meaning from context. The ultimate goal of this material is to prepare students to read and comprehend what they have been reading during their time at university effectively.
Objectives
Upon completing this material, learners will be able to:
✓ Identify the various purposes of reading comprehension.
✓ Read and find the main ideas in a reading text.
✓ Guess the meanings of new words from context.
✓ Read a text and answer comprehension questions.
✓ Attempt the pre-reading, while reading, and post-reading questions.
✓Answer inferences and reference questions.
Required Texts and Online Materials
Shea, M., and Nancy K. (2016). FIVES Strategy for Reading Comprehension. USA: Learning
Sciences International.
Grellet, F. (1981) Developing Reading Skills: A practical guide to reading comprehension exercises. Cambridge: Cambridge University Press.
Training Policy (Ground rules)
Required Assignments
16 Traits You Need... Human Groups and... https://www.tongji.... New Tab Let's talk in english... YouTube Maps News Adobe Acrobat
Add A Block
Add...
Unit One: Study reading
Reading for Study
Academic reading
Skimming
pre reading activity for unit one
post reading activity for unit one
while reading activity for unit one
similarities and differences of reading and reading comprehension, stages of Reading, types of reading (skimming and scanning...)
Health and Fitness
Vocabulary activities for unit one
Edit
Add a resource...
Add an activity...
Unit Two: Health and Fitness
Unit Two: Health and Fitness
Issues of health and fitness
Finding the main idea
Identification of main ideas from a paragraph
Cours... PPT f... Disser... Search Com... Address

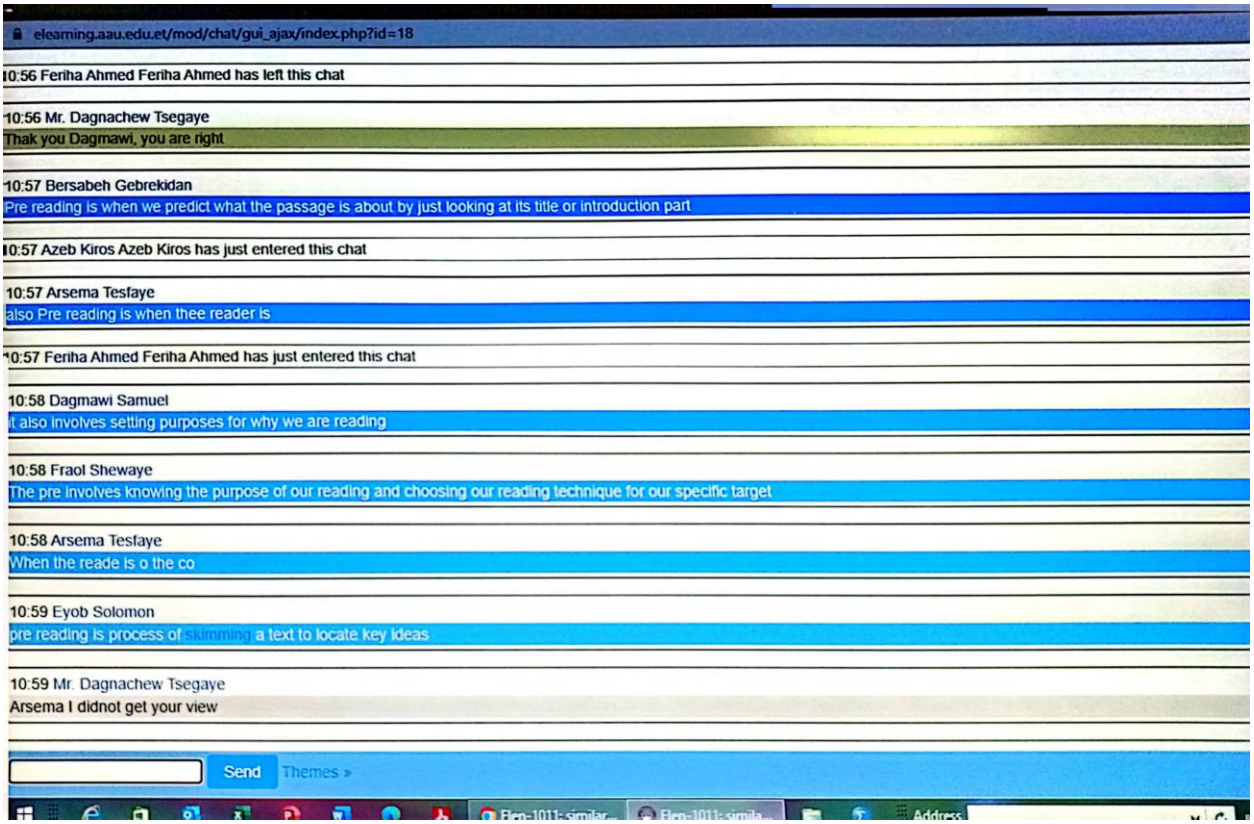

elearning.aau.edu.et/course/view.php?id=377#section-4
16 Traits You Need...
Human Groups and...
https://www.tongji....
New Tab
Let's talk in english...
YouTube
Maps
News
Adobe Acrobat
Unit Two: Health and Fitness
Edit
Unit Two: Health and Fitness
Issues of health and fitness
Finding the main idea
Identification of main ideas from a paragraph
Guessing vocabulary from context
Ways of guessing the meaning of unfamiliar words
Pre reading activity for unit two
While reading activity for unit two
Post reading activity for unit two
Vocabulary learning
Vocabulary learning strategy
Add a resource...
Add an activity...
Unit Three: The Awramba Community
Unit Three: The Awramba Community
The Awramba Community
Awramba Community
youtube video
Making Inferences
Chat session about the three reading stages
Pre reading activity for unit three
While reading activity for unit three
Post reading activity for unit three
Discussion forum on activities.
Africa's Wild Animals
African wild animals
Unit Four: Africa's Wild Animals
Unit Four: Africa's Wild Animals
Gorillas and Chimpanzees


elearning.aau.edu.et/course/view.php?id=377#section-4
16 Traits You Need...
Human Groups and...
https://www.tongji....
New Tab
Let's talk in english...
YouTube
Maps
News
Adobe Acrobat
Add a resource...
Add an activity...
Unit Four: Africa's Wild Animals
Edit
Unit Four: Africa's Wild Animals
Gorillas and Chimpanzees
Edit
Pre reading activity for unit four
Edit
Reading comprehension activities for unit four
Edit
Add a resource...
Add an activity...
Unit Five: Population pyramid
Edit
Unit Five: Population pyramid
Population Pyramid
Edit
video on population pyramid
Edit
Video on how to read a population pyramid
Edit
Video on Collocations
Edit
Collocations about population (Video)
Edit
While reading activity for unit five
Edit
Pre reading activity for unit five
Edit
Post reading activity for unit five
Edit

Appendix X: Sample Discussion Forums and Chat sessions of the Experimental Group




elearning.aau.edu.et/mod/chat/gui_ajax/index.php?id=18
Mr. Dagnachew Tsegaye
11:00 Aser Berhanu
post reading is all about summarizing or concluding the ideas that you found whilie you read
11:00 Bersabeh Gebrekidan
While reading is when we get deep in to the passage and already know its main point
11:00 Arsema Tesfaye
apologized .I just want to say pre reading is when the reader overview the text and make prediction about the content
1:00 Feriha Ahmed Feriha Ahmed has left this chat
11:00 Mr. Dagnachew Tsegaye
Le us firs finish the pre reading
11:00 Azeb Kiros
Pre reading involvespreviewing the text to get an overview of its content
11:00 Dagmawi Samuel
like are we reading for entertainment or if we are reading to write critics and like
11:01 Edilawit Desalegn
Also pre involves recalling for the past experiences regarding to the topic for an easy understanding of the idea and easily get the main idea while reading.
11:01 Bezawit Dereje
then post reading is all about mulching the information that has been absorbed and testing our selves on how much we comprehend
11:01 Mr. Dagnachew Tsegaye
right you are Arsema.
Send
Themes »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Thak you Dagmawi, you are right
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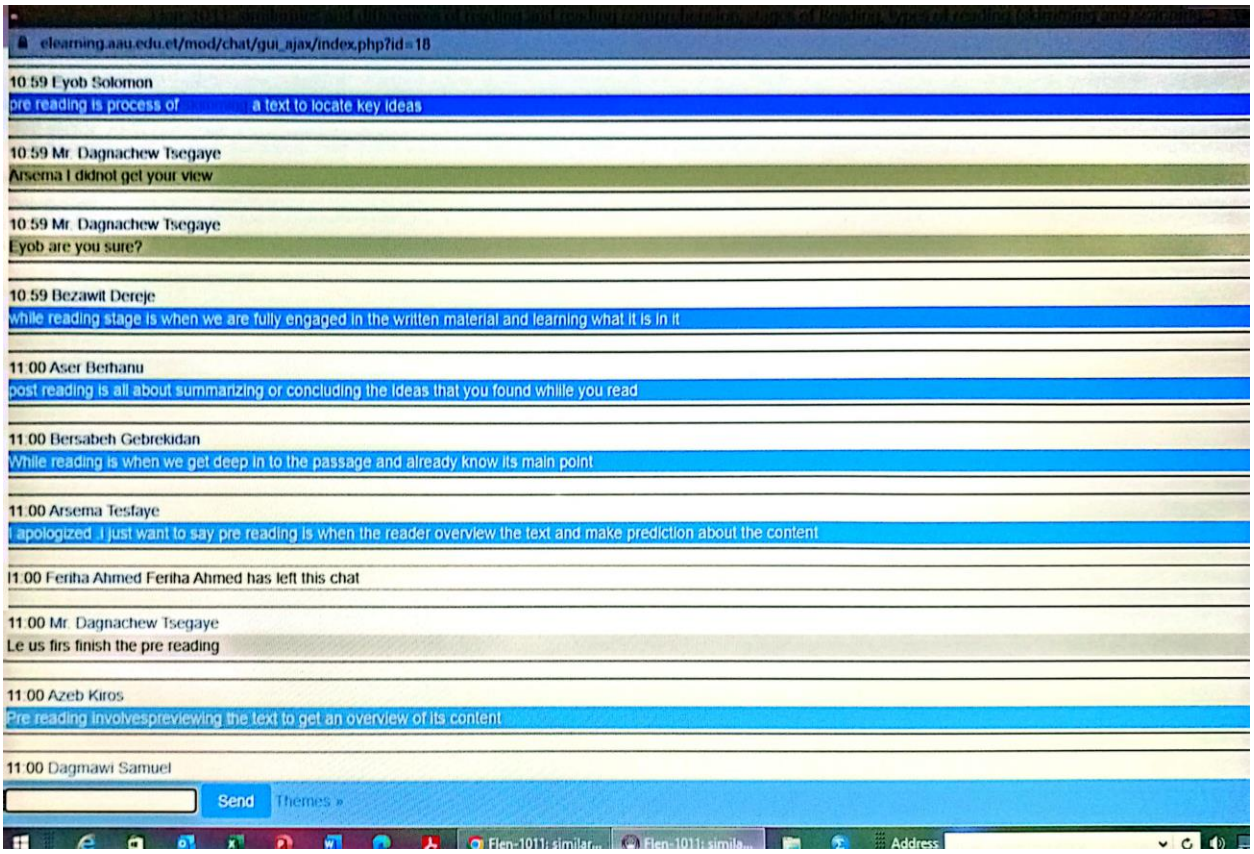
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10:59 Bezawit Dereje
while reading stage is when we are fully engaged in the written material and learning what it is in it
11:00 Aser Berhanu
post reading is all about summarizing or concluding the ideas that you found whille you read
11:00 Bersabeh Gebrekidan
While reading is when we get deep in to the passage and already know its main point
11:00 Arsema Tesfaye
I apologized .I just want to say pre reading is when the reader overview the text and make prediction about the content
11:00 Feriha Ahmed Feriha Ahmed has left this chat
11:00 Mr. Dagnachew Tsegaye
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Pre reading involvespreviewing the text to get an overview of its content
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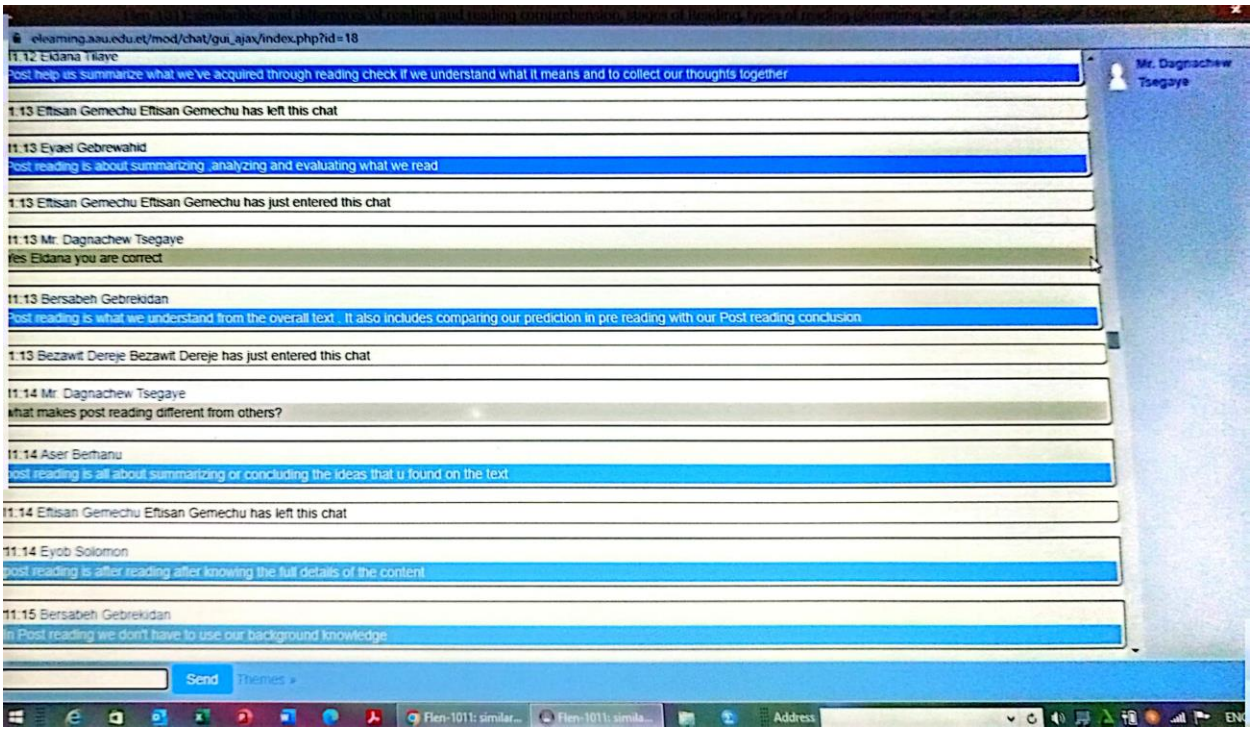
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11:12 Eldana Tilaye
Post help us summarize what we've acquired through reading check if we understand what it means and to collect our thoughts together
11:13 Eftisan Gemechu Eftisan Gemechu has left this chat
11:13 Eyael Gebrewahid
Post reading is about summarizing ,analyzing and evaluating what we read
11:13 Eftisan Gemechu Eftisan Gemechu has just entered this chat
11:13 Mr. Dagnachew Tsegaye
Yes Eldana you are correct
11:13 Bersabeh Gebrekidan
Post reading is what we understand from the overall text . It also includes comparing our prediction in pre reading with our Post reading conclusion
11:13 Bezawit Dereje Bezawit Dereje has just entered this chat
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what makes post reading different from others?
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post reading is all about summarizing or concluding the ideas that u found on the text
11:14 Eftisan Gemechu Eftisan Gemechu has left this chat
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post reading is after reading after knowing the full details of the content
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In Post reading we don't have to use our background knowledge
Mr. Dagnachew Tsegaye
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Appendix Y: Pre-Post Reading Comprehension Test

Addis Ababa University

College of Humanities, Language Studies, and Journalism and Communication

Department of Foreign Languages and Literature

Time Allotted: 1:30

Code of the Student_____

General Instructions

• There are 35 multiple choice questions in three passages adopted from TOEFL *iBT*® (2023), and you are to answer all the questions on each passage.
• Read the passages carefully and then answer the questions below each passage.
• Write the letter of your answer only on the answer sheet.

Reading Comprehension Passage I

1. Growth, reproduction, and daily metabolism all require an organism to expend energy. The expenditure of energy is essentially a process of budgeting, just as finances are budgeted. If all of one's money is spent on clothes, there may be none left to buy food or go to the movies. Similarly, a plant or animal cannot **squander** all its energy on growing a big body if **none** would be left over for reproduction, for this is the surest way to extinction.

2. All organisms, therefore, allocate energy to growth, reproduction, maintenance, and storage. No choice is involved; this allocation comes as part of the genetic package from the parents. Maintenance for a given body design of an organism is relatively constant. Storage is important, but ultimately that energy will be used for maintenance, reproduction, or growth. Therefore the principal differences in energy allocation are likely to be between growth and reproduction.

3. Almost all of an organism's energy can be diverted to reproduction, with very little allocated to building the body. Organisms at this extreme are **"opportunists**." At the other extreme are "**competitors,**" almost all of whose resources are invested in building a huge body, with a bare minimum allocated to reproduction.

4. Dandelions are good examples of opportunists. Their seed heads raised just high enough above the ground to catch the wind, the plants are no bigger than they need be, their stems are hollow, and all the rigidity comes from their water content. Thus, a minimum investment has been made

in the body that becomes a platform for seed **dispersal**. These very short-lived plants reproduce prolifically; that is to say they provide a constant rain of seed in the neighborhood of parent plants. A new plant will spring up wherever a seed falls on a suitable soil surface, but because they do not build big bodies, they cannot compete with other plants for space, water, or sunlight. **These plants are termed opportunists because they rely on their seeds' falling into settings where competing plants have been removed by natural processes, such as along an eroding riverbank, on landslips, or where a tree falls and creates a gap in the forest canopy.**

5. Opportunists must constantly invade new areas to compensate for being displaced by more competitive species. Human landscapes of lawns, fields, or flowerbeds provide settings with bare soil and a lack of competitors that are perfect habitats for colonization by opportunists. Hence, many of the strongly opportunistic plants are the common weeds of fields and gardens.

6. Because each individual is short-lived, the population of an opportunist species is likely to be adversely affected by drought, bad winters, or floods. If their population is tracked through time, it will be seen to be particularly unstable—soaring and plummeting in irregular cycles.

7. The opposite of an opportunist is a competitor. These organisms tend to have big bodies, are long lived, and spend relatively little effort each year on reproduction. An oak tree is a good example of a competitor. A **massive** oak claims its ground for 200 years or more, out competing all other would-be canopy trees by casting a dense shade and drawing up any free water in the soil. The leaves of an oak tree taste foul because they are rich in tannins, a chemical that renders them distasteful or indigestible to many organisms. The tannins are part of the defense mechanism that is essential to longevity. Although oaks produce thousands of acorns, the investment in a crop of acorns is small compared with the energy spent on building leaves, trunk, and roots. Once an oak tree becomes established, it is likely to survive minor cycles of drought and even fire. A population of oaks is likely to be relatively stable through time, and its survival is likely to depend more on its ability to withstand the pressures of competition or predation than on its ability to take advantage of chance events. It should be noted, however, that the pure opportunist or pure competitor is rare in nature, as most species fall between the extremes of a continuum, exhibiting a blend of some opportunistic and some competitive characteristics.

1. The word **squander** in the passage is closest in meaning to

A. extend B. transform C. activate D. waste

2. The word **none** in the passage refers to

A. food B. plant or animal C. energy D. big body

3. In paragraph 1, the author explains the concept of energy expenditure by

A. identifying types of organisms that became extinct

B. comparing the scientific concept to a familiar human experience

C. arguing that most organisms conserve rather than expend energy

D. describing the processes of growth, reproduction, and metabolism

4. According to the passage, the classification of organisms as "opportunists" or "competitors" is determined by

A. how the genetic information of an organism is stored and maintained

B. the way in which the organism invests its energy resources

C. whether the climate in which the organism lives is mild or extreme

D. the variety of natural resources the organism consumes in its environment

5. The word **dispersal** in the passage is closest in meaning to

A. development B. growth C. distribution D. protection

6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage (4th paragraph)? *Incorrect* choices change the meaning in important ways or leave out essential information.

A. Because their seeds grow in places where competing plants are no longer present, dandelions are classified as opportunists.

B. Dandelions are called opportunists because they contribute to the natural processes of erosion and the creation of gaps in the forest canopy.

C. The term opportunists applies to plants whose seeds fall in places where they can compete with the seeds of other plants.

D. The term opportunists applies to plants whose falling seeds are removed by natural processes.

7. The word **massive** in the passage is closest in meaning to

A. huge B. ancient C. common D. successful

8. All of the following are mentioned in paragraph 7 as contributing to the longevity of an oak tree EXCEPT

A. the capacity to create shade

B. leaves containing tannin

C. the ability to withstand mild droughts and fire

D. the large number of acorns the tree produces

9. According to the passage, oak trees are considered competitors because

A. they grow in areas free of opportunists

B. they spend more energy on their leaves, trunks and roots than on their acorns

C. their population tends to increase or decrease in irregular cycles

D. unlike other organisms, they do not need much water or sunlight

10. In paragraph 7, the author suggests that most species of organisms

A. are primarily opportunists

B. are primarily competitors

C. begin as opportunists and evolve into competitors

D. have some characteristics of opportunists and some of competitors

Reading Comprehension Passage II

1. In Southwest France in the 1940's, playing children discovered Lascaux Grotto, a series of narrow cave chambers that contain huge prehistoric paintings of animals. Many of these beasts are as large as 16 feet (almost 5 meters). Some follow each other in solemn parades, but **others** swirl about, sideways and upside down. The animals are bulls, wild horses, reindeer, bison, and mammoths outlined with charcoal and painted mostly in reds, yellow, and browns. Scientific analysis reveals that the colors were derived from ocher and other iron oxides ground into a fine powder. **Methods** of applying color varied: some colors were brushed or smeared on rock surfaces and others were blown or sprayed. It is possible that tubes made from animal bones were used for spraying because hollow bones, some stained with pigment, have been found nearby.

2. One of the most puzzling aspects of the paintings is their location. Other rock paintings—for example, those of Bushmen in South Africa—are either located near cave entrances or completely in the open. Cave paintings in France and Spain, however, are in recesses and caverns far removed from original cave entrances. This means that artists were forced to work in cramped spaces and without sources of natural light. It also implies that whoever made them did not want them to be easily found. Since cave dwellers normally lived close to entrances, there must have been some reason why so many generations of Lascaux cave dwellers hid their art.

3. Scholars offer three related but different opinions about the mysterious origin and significance of these paintings. One opinion is that the paintings were a record of seasonal migrations made by herds. Because some paintings were made directly over others, **obliterating** them, it is probable that a painting's value ended with the migration it pictured. Unfortunately, this explanation fails to explain the hidden locations, unless the migrations were celebrated with **secret ceremonies**.
4. Another opinion is that the paintings were directly related to hunting and were an essential part of a special preparation ceremony. This opinion holds that the pictures and whatever ceremony they **accompanied** were an ancient method of psychologically motivating hunters. It is conceivable that before going hunting the hunters would draw or study pictures of animals and imagine a successful hunt. Considerable support exists for this opinion because several animals in the pictures are wounded by arrows and spears. This opinion also attempts to solve the over painting by explaining that an animal's picture had no further use after the hunt.
5. A third opinion takes psychological motivation much further into the realm of tribal ceremonies and mystery: the belief that certain animals assumed mythical significance as ancient ancestors or protectors of a given tribe or clan. Two types of images substantiate this theory: the strange, indecipherable geometric shapes that appear near some animals, and the few drawings of men. Wherever men appear they are crudely drawn and their bodies are elongated and rigid. Some men are in a prone position and some have bird or animal heads. Advocates for this opinion point to reports from people who have experienced a **trance state**, a highly suggestive state of low consciousness between waking and sleeping. Uniformly, these people experienced weightlessness and the sensation that their bodies were being stretched lengthwise. Advocates also point to people who believe that the forces of nature are inhabited by spirits, particularly shamans* who believe that an animal's spirit and energy is transferred to them while in a trance. One Lascaux narrative picture, which shows a man with a birdlike head and a wounded animal, would seem to lend credence to this third opinion, but there is still much that remains unexplained. For example, where is the proof that the man in the picture is a shaman? He could as easily be a hunter wearing a head mask. Many tribal hunters, including some Native Americans, camouflaged themselves by wearing animal heads and hides.
6. Perhaps so much time has passed that there will never be satisfactory answers to the cave images, but their mystique only adds to their importance. Certainly a great art exists, and by its existence reveals that ancient human beings were not without intelligence, skill, and sensitivity.

*__shamans:__ holy people who act as healers and diviners

11. The word **others** in the passage refers to

A. chambers B. paintings C. beasts D. parades

12. The word **Methods** in the passage is closest in meaning to

A. Ways B. Shades C. Stages D. Rules

13. What are the bones found in the Lascaux caves believed to indicate?

A. Wild animals sometimes lived in the cave chambers.

B. Artists painted pictures on both walls and bones.

C. Artists ground them into a fine powder to make paint.

D. Artists developed special techniques for painting the walls.

14. Why does the author mention Bushmen in South Africa in paragraph 2?

A. To suggest that ancient artists from all over the world painted animals on rocks

B. To contrast the location of their rock paintings to those found at Lascaux

C. To support the claim that early artists worked in cramped spaces

D. To give an example of other artists who painted in hidden locations

15. What can be inferred from paragraph 2 about cave painters in France and Spain?

A. They also painted rocks outside caves.

B. They did not live close to the cave entrances.

C. They developed their own sources of light to use while painting.

D. Their painting practices did not last for many years.

16. Why does the author mention secret ceremonies?

A. To present a common opinion held by many scholars

B. To suggest a similarity between two opinions held by scholars

C. To suggest a possible explanation for a weakness in an opinion expressed in the passage

D. To give evidence that contradicts a major opinion expressed in the passage

17. The word **accompanied** in the passage is closest in meaning to

A. represented B. Developed into C. were associated with D. came after

18. According to paragraph 4, why do some scholars believe that the paintings were related to hunting?

A. Because some tools used for painting were also used for hunting

B. Because cave inhabitants were known to prefer animal food rather than plant food

C. Because some of the animals are shown wounded by weapons

D. Because many hunters were also typically painters

19. According to paragraph 5, why do some scholars refer to a trance state to help understand the cave paintings?

A. To explain the state of consciousness the artists were in when they painted their pictures

B. To demonstrate the mythical significance of the strange geometric shapes

C. To indicate that trance states were often associated with activities that took place inside caves

D. To give a possible reason for the strange appearance of the men painted on the cave walls

20. According to paragraph 5, if the man pictured with the birdlike head is not a shaman, he may have worn the head mask

A. to look like an animal while a hunt took place

B. to frighten off other hunters competing for food

C. to prove that he is not a shaman

D. to resist forces of nature thought to be present in animals

21. According to paragraph 6, why might the puzzling questions about the paintings never be answered?

A. Keeping the paintings a mystery will increase their importance.

B. The artists hid their tools with great intelligence and skill.

C. Too many years have gone by since the images were painted.

D. Answering the questions is not very important to scholars.

22. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage.

Scholars have wondered about the meaning of the subjects, location, and over painting of Lascaux cave images.
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Answer Choices

A. The paintings may have recorded information about animal migrations, and may only have been useful for one migration at a time.

B. Unlike painters of the recently discovered paintings, other Lascaux cave painters usually painted on rocks near cave entrances or in open spaces outside the caves.

C. The human figures represented in the paintings appear to be less carefully shaped than those of animals.

D. Some scholars believe that the paintings motivated hunters by allowing them to picture a successful hunt.

E. It is possible that the animals in the paintings were of mythical significance to the tribe, and the paintings reflected an important spiritual practice.

F. Scientific analysis suggests that paintings were sprayed onto the rock walls with tubes made from animal bones.

Reading Comprehension Passage III

1. Since 1980, the use of wind to produce electricity has been growing rapidly. In 1994 there were nearly 20,000 wind turbines worldwide, most grouped in clusters called **wind farms** that collectively produced 3,000 megawatts of electricity. Most were in Denmark (which got 3 percent of its electricity from wind turbines) and California (where 17,000 machines produced 1 percent of the state's electricity, enough to meet the residential needs of a city as large as San Francisco). In principle, all the power needs of the United States could be provided by exploiting the wind potential of just three states—North Dakota, South Dakota, and Texas.

2. Large wind farms can be built in six months to a year and then easily expanded as needed. With a moderate to fairly high net energy yield, these systems **emit** no heat-trapping carbon dioxide or other air pollutants and need no water for cooling; manufacturing them produces little water pollution. The land under wind turbines can be used for grazing cattle and other purposes, and leasing land for wind turbines can provide extra income for farmers and ranchers.

3. Wind power has a significant cost advantage over nuclear power and has become competitive with coal-fired power plants in many places. With new technological advances and mass production, projected cost declines should make wind power one of the world's cheapest ways to

produce electricity. In the long run, electricity from large wind farms in remote areas might be used to make hydrogen gas from water during periods when there is less than peak demand for electricity. The hydrogen gas could then be fed into a storage system and used to generate electricity when additional or backup power is needed.

4. Wind power is most economical in areas with steady winds. In areas where the wind dies down, backup electricity from a utility company or from an energy storage system becomes necessary. Backup power could also be provided by linking wind farms with a solar cell, with conventional or pumped-storage hydropower, or with efficient natural-gas-burning turbines. Some drawbacks to wind farms include visual pollution and noise, although these can be overcome by improving their design and locating them in isolated areas.
5. **Large wind farms might also interfere with the flight patterns of migratory birds in certain areas, and they have killed large birds of prey (especially hawks, falcons, and eagles) that prefer to hunt along the same ridge lines that are ideal for wind turbines.** The killing of birds of prey by wind turbines has pitted environmentalists who champion wildlife protection against environmentalists who promote renewable wind energy. Researchers are evaluating how serious this problem is and hope to find ways to eliminate or sharply reduce **this problem**. Some analysts also contend that the number of birds killed by wind turbines is dwarfed by birds killed by other human-related sources and by the potential loss of entire bird species from possible global warming. Recorded deaths of birds of prey and other birds in wind farms in the United States currently **amount to** no more than 300 per year. By contrast, in the United States an estimated 97 million birds are killed each year when they collide with buildings made of plate glass, 57 million are killed on highways each year; at least 3.8 million die annually from pollution and poisoning; and millions of birds are electrocuted each year by transmission and distribution lines carrying power produced by nuclear and coal power plants.
6. The technology is in place for a major expansion of wind power worldwide. Wind power is a virtually unlimited source of energy at favorable sites, and even excluding environmentally sensitive areas, the global potential of wind power is much higher than the current world electricity use. In theory, Argentina, Canada, Chile, China, Russia, and the United Kingdom could use wind to meet all of their energy needs. Wind power experts **project** that by the middle of the twenty-first century wind power could supply more than 10 percent of the world's electricity and 10-25 percent of the electricity used in the United States.

23. Based on the information in paragraph one which of the following best explains the term wind farms?

A. Farms using windmills to pump water

B. Research centers exploring the uses of wind

C. Types of power plant common in North Dakota

D. Collections of wind turbines producing electric power

24. The word **emit** in the passage is closest in meaning to

A. use B. require C. release D. destroy

25. Based on the information in paragraph 3 and paragraph 4, what can be inferred about the states of North Dakota, South Dakota, and Texas mentioned at the end of paragraph 1?

A. They rely largely on coal-fired power plants.

B. They contain remote areas where the winds rarely die down.

C. Over 1 percent of the electricity in these states is produced by wind farms.

D. Wind farms in these states are being expanded to meet the power needs of the United States.

26. According to paragraph 3, which of the following is true about periods when the demand for electricity is relatively low?

A. These periods are times when wind turbines are powered by hydrogen gas.

B. These periods provide the opportunity to produce and store energy for future use.

C. These periods create storage problems for all forms of power generation.

D. These periods occur as often as periods when the demand for electricity is high.

27. In paragraph 4, the author states that in areas where winds are not steady

A. power does not reach all customers B. wind farms cannot be used

C. solar power is more appropriate D. backup systems are needed

28. According to paragraph 4, what can be inferred about the problems of visual pollution and noise associated with wind farms?

A. Both problems affect the efficiency of wind farms.

B. Possible solutions are known for both problems.

C. Wind power creates more noise than visual pollution.

D. People are more concerned about visual pollution than noise.

29. The phrase **this problem** in the passage (paragraph 5) refers to

A. interference with the flight patterns of migrating birds in certain areas

B. building ridge lines that are ideal for wind turbines

C. the killing of birds of prey by wind turbines

D. meeting the demands of environmentalists who promote renewable wind energy

30. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

A. Hawks, falcons, and eagles prefer to hunt along ridge lines, where wind turbines can kill large numbers of migratory birds.

B. Wind turbines occasionally cause migratory birds to change their flight patterns and therefore may interfere with the areas where birds of prey prefer to hunt.

C. Some of the best locations for large wind farms are places that may cause problems for migrating birds and birds of prey.

D. Large wind farms in certain areas kill hawks, falcons, and eagles and thus might create a more ideal path for the flight of migratory birds.

31. In paragraph 5, why does the author give details about the estimated numbers of birds killed each year?

A. To argue that wind farms should not be built along ridge lines

B. To point out that the deaths of migratory birds exceed the deaths of birds of prey

C. To explain why some environmentalists oppose wind energy

D. To suggest that wind turbines result in relatively few bird deaths

32. The phrase **amount to** in the passage is closest in meaning to

A. can identify B. change C. are reduced by D. total

33. The word **project** in the passage is closest in meaning to

A. estimate B. respond C. argue D. plan

34. Which of the following statements most accurately reflects the author's opinion about wind energy?

A. Wind energy production should be limited to large wind farms.

B. The advantages of wind energy outweigh the disadvantages.

C. The technology to make wind energy safe and efficient will not be ready until the middle of the twenty-first century.

D. Wind energy will eventually supply many countries with most of their electricity.

35. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the **THREE** answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage.

In the future, wind power is likely to become a major source of the world's energy supply.
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Answer Choices

A. Wind farms have already produced sufficient amounts of electricity to suggest that wind power could become an important source of electric power.

B. The wind energy produced by just a small number of states could supply all of the power needs of the United States.

C. Wind power has several advantages, such as low pollution and projected cost declines, compared to other energy sources.

D. Although wind power is not economical in areas with steady winds, alternative wind sources can be used to simulate wind power.

E. Responding to environmentalists concerned about birds killed by wind turbines, analysts point to other human developments that are even more dangerous to birds.

F. Smaller countries, which use less electricity than large countries, are especially suited to use wind power to meet all their energy needs.

Appendix Z: Published Articles

Published Article 1
Title: The Effects of Blended Learning on University Students' Reading Comprehension. ELT Forum: Journal of English Language Teaching, Vol. *13*, No.2, July 2024, pages 163-173. http://journal.unnes.ac.id/sju/index.php/elt
Published Article 2 Title: Challenges and Benefits of Blended Learning in University EFL Reading Comprehension:
A Mixed-Method Study. JELITA: Journal of English Language Teaching and Literature, Vol. 5, No. 2, August 2024, pages 374-393.