ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

MBA PROGRAM

EFFECTIVENESS AND CHALLENGES OF LIVE ONLINE MBA LECTURES: APPLYING THE COMMUNITY OF INQUIRY (COI) FRAMEWORK AT ADDIS ABABA UNIVERSITY, COLLEGE OF BUSINESS AND ECONOMICS

BY

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ADDIS ABABA, ETHIOPIA

JUNE, 2024

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(GSE/7060/13)

A THESIS SUBMITTED TO

COLLEGE OF BUSINESS AND ECONOMICS

PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MBA IN MANAGEMENT PROGRAM

ADDIS ABABA UNIVERSITY

ADDIS ABABA, ETHIOPIA

JUNE, 2024

ADDIS ABABA UNIVERSITY
DEPARTMENT OF MBA
COLLEGE OF BUSINESS AND ECONOMICS

STATEMENT OF DECLARATION

I, Asegid Debebe, hereby declare that the thesis titled "**Effectiveness and Challenges of Live Online MBA Lectures: Applying the Community of Inquiry (CoI) Framework at Addis Ababa University, College of Business and Economics**" is the outcome of my own effort and study and that all sources of materials used for this study have been duly acknowledged. This study has not been submitted for any degree at this University or other university. It is offered to partially fulfill the degree requirements of the Masters of Business Administration (MBA) in Management.

Name: Asegid Debebe Feyissa

Signature: _____

June 2024

STATEMENT OF CERTIFICATION

This is to certify that this thesis titled "**Effectiveness and Challenges of Live Online MBA Lectures: Applying the Community of Inquiry (CoI) Framework at Addis Ababa University, College of Business and Economics**" and submitted in partial fulfillment of the requirements of Master of Business Administration in Management complies with the regulations of the university and meets the acceptable standards concerning originality and quality.

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Acknowledgements

I would like to express my deepest gratitude and respect to my advisor, Dr. Tilahun Teklu (Ph.D) for his invaluable support, guidance, and encouragement throughout my work on this thesis. His insights and advice were crucial to the completion of this research.

I am also profoundly grateful to the MBA Extension students at the College of Business and Economics, cohort of 2020/2021, as well as the instructors who generously took the time to complete the survey questionnaire prepared for this thesis. Their contributions were invaluable, and I deeply appreciate their participation.

I would also like to extend my heartfelt appreciation to Dr. Meskerem Mitiku (Ph.D) and Dr. Zelalem Gebretsadik (Ph.D) for their continuous encouragement and support to me and the rest of the graduating class throughout the semester, ensuring that we could complete our work on time.

Additionally, I am indebted to my external advisor, Dr. Taye Amoge (Ph.D), for his meticulous examination of the document and his detailed, constructive comments and suggestions. His feedback greatly improved the quality of this thesis.

Thank you all for your support and contributions

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Acronyms

AAU	Addis Ababa University
CoBE	College of Business and Economics
CoI	Community of Inquiry
COVID	Corona Virus Disease
LMS	Learning Management System
MBA	Master of Business Administration
MOOC	Massive Open Online Course
PLS	Partial Least Squares
SEM	Structured Equation Modeling
WBT	Web-based Training

Abstract

This thesis examined the effectiveness and challenges of online lectures for MBA students at Addis Ababa University's College of Business and Economics (CoBE) using the Community of Inquiry (CoI) framework, which includes cognitive, teaching, and social presences. Data were collected from 111 students and 6 instructors via the CoI questionnaire and analyzed using descriptive statistics and Partial Least Square Structural Equation Modeling (PLS-SEM). The results indicated that while students generally understood the material taught online, the significant majority of the students faced technical difficulties impacting their learning experience. Many students expressed satisfaction with online learning and a willingness to continue, although concerns about its sufficiency for full preparation for exams and assignments remained. Instructors had mixed experiences, with some expressing satisfaction and others highlighting challenges such as internet connectivity issues and the lack of interactive teaching aids. The PLS-SEM analysis revealed significant relationships between teaching, social, and cognitive presences and the perceived effectiveness of online learning. The findings highlight the importance of addressing technical challenges, enhancing digital literacy, and improving teaching strategies to foster engagement and interaction in online classes. This research contributes to understanding online learning dynamics and provides recommendations for improving online education practices at Addis Ababa University and similar institutions.

Keywords
Online Learning, Addis Ababa University, Live Lecture, COVID-19

Chapter 1: Introduction

1.1 Background of the Study

Online learning is markedly transforming the landscape of higher education globally, propelled by significant technological advancements and the ubiquity of digital devices such as laptop computers, tablets, and smartphones along with the evolution of computational capabilities and the widespread availability of these technologies; the increasing availability and lower-cost, higher-speed Internet connections, have helped transform a paradigm shift in educational delivery methods (Akour & Alenezi, 2022).

The online learning mode offers unparalleled convenience by removing the need for physical presence on campus, eliminating the logistical challenges and time commitments associated with traditional classroom attendance. Furthermore, online education facilitates the enrollment of a substantially larger number of participants simultaneously, significantly enhancing accessibility and inclusivity (Dumford & Miller, 2018).

The onset of the COVID-19 pandemic accelerated the adoption of online learning systems. Institutions that may have otherwise been hesitant or slow to transition away from conventional face-to-face teaching methodologies were compelled to implement and scale up digital learning solutions rapidly. This unexpected shift served as a critical test of the resilience and adaptability of educational frameworks worldwide. The pandemic underscored the potential and necessity of online platforms and highlighted the need for robust, flexible educational structures capable of sustaining learning amidst unprecedented challenges (Mahat, 2021).

Additionally, the flexibility to study at one's own pace and schedule addresses the diverse needs of students, many of whom juggle academic commitments with personal and professional responsibilities. This aspect of online learning is particularly beneficial in accommodating students' varied learning preferences and lifestyles, making education more adaptable and personalized (Mahat, 2021).

As such, adopting online learning during the COVID-19 pandemic addressed immediate educational challenges and set the stage for a broader reconsideration of teaching and learning modalities in the post-pandemic era. The continued exploration and refinement of

these digital approaches are essential to enhance the effectiveness, accessibility, and resilience of higher education systems globally.

As the world shifts toward online education, this transition has highlighted new opportunities and challenges in delivering online lectures, particularly in professional programs like the MBA.

Like many institutions worldwide, Addis Ababa University has employed the staff to deliver MBA courses online. However, this shift has introduced new challenges, revealing varying levels of engagement, digital literacy, and access to necessary infrastructure among students and faculty. This transformation requires a thorough evaluation to ensure that students continue receiving high-quality education.

1.2 Statement of the Problem

The rapid transition to online learning, accelerated by the COVID-19 global pandemic, has revolutionized educational delivery methods across the world (Dhawan, 2020). While the transition to online learning has been a global trend, its effectiveness and the specific challenges encountered in the MBA program at Addis Ababa University, College of Business and Economics, have not been thoroughly identified and documented. In the context of a developing country, factors such as internet connectivity issues, power interruptions, lack of interaction, and difficulties in adapting to new technologies are presumed to affect the learning experience, but these assumptions lack empirical validation within this specific academic environment (Adnan & Anwar, 2020).

Assessing the overall perceived effectiveness from the perspective of the participants and identifying the major challenges they encountered will be crucial for enhancing the provision of future online courses at Addis Ababa University and comparable educational institutions.

1.3 Research Objectives

This research aims to comprehensively evaluate the live online lecture experience at Addis Ababa University, College of Business and Economics. First, it examines the perceived effectiveness and attitudes of students and instructors towards these lectures, providing insights into their overall satisfaction and areas for improvement. Second, it attempts to identify if the perceived effectiveness of live online classes differs from that of face-to-face classes from the instructors' point of view. Third, it identifies the major challenges faced during the live online teaching and learning process, highlighting obstacles such as technological issues and engagement difficulties. Finally, it explores and recommends effective strategies to enhance the quality and effectiveness of online education, focusing on improving technological infrastructure, pedagogical approaches, and support systems for both students and instructors.

These three objectives are explained below:

Objective 1: Gauge the perceived satisfaction level and attitudes toward live online lectures from the point of view of the students and instructors.

Objective 2: Identify challenges faced by the students and instructors in live online teaching and learning.

Objective 3: Identify the relationship between the Teaching, Cognitive and Social presences in the live online classes using the Community of Inquiry Framework.

1.4 Research Questions

The primary questions that this research attempts to answer are:

1. What are the students' and instructors' overall satisfaction levels in the live online classes?
2. What are students' and instructors' primary challenges during AAU's online teaching/learning process?
3. What is the perceived level of presence of the CoI framework's key online learning elements (Cognitive, Teaching, and Social presences) at live online classes at AAU, CoBE.

1.5 Significance of the Study

The significance of this study lies in its evaluation of the perceived satisfaction level of students and the instructors of live online lectures at Addis Ababa University, College of Business and Economics and the identification of the primary challenges faced by the students and instructors who have participated in the online classes during the COVID-19 pandemic. As online education becomes increasingly prevalent, understanding this teaching mode's effectiveness, challenges, and potential improvement areas is crucial for students, instructors, and educational institutions.

This study is significant for several reasons:

1. **Improving Educational Outcomes:** By assessing the perceived effectiveness and attitudes of both students and instructors, this research provides helpful insights into how well current online teaching methods are meeting educational goals. Identifying strengths and areas for improvement will help enhance the quality of education, thereby contributing to better student learning outcomes and overall academic success.

2. **Understanding Challenges**: Understanding the specific challenges faced by students and instructors in the online learning environment is essential for developing targeted interventions. By identifying technological, pedagogical, and engagement-related

issues, this study aims to inform the creation of more supportive and effective online learning experiences. Addressing these challenges will help reduce barriers to learning and improve the overall experience for both students and instructors.

3. **Enhancing Student and Instructor Experience**: Ultimately, this research aims to create a more effective, enjoyable, and supportive online learning environment. By listening to the voices of both students and instructors, the study ensures that their needs and preferences are considered in the design and delivery of online education. This focus on user experience is essential for fostering a positive and productive educational atmosphere.

1.6 Scope of the Study

The study focuses on live online classes conducted for MBA classes at Addis Ababa University, College of Business and Economics. The primary subjects are extension class graduate MBA program students and their instructors involved in live online classes at CoBE. These participants provide two critical perspectives on the educational process: the learner's experience and the educator's methodologies. This research analyzed classes delivered via online lectures, excluding asynchronous learning activities such as recorded lectures or self-paced course modules delivered via learning management systems (LMS) such as Moodle or Canvas.

1.7 Limitations of the Study

One limitation of this study is the potential recall bias due to the time elapsed since the students participated in the online courses. Given that the data collection occurred sometime after the completion of their online learning experiences, participants may not accurately remember all the nuances and specific details of their experiences. This time-lapse can affect their responses' reliability, as memories may have faded or been influenced by subsequent experiences. As a result, the findings may not fully capture the immediate and detailed reactions to the online learning environment, potentially leading to an incomplete or skewed understanding of the students' true experiences and perceptions during the actual time of their online courses. Future studies should aim to minimize this recall bias by collecting data closer to the participation period in online courses to ensure more accurate and reflective responses.

1.8 Organization of the Paper

The paper is organized into six chapters. The first chapter introduces the research, including the background, problem statement, study objectives, research questions, significance, and scope of the study. The second chapter reviews the relevant literature. Chapter three outlines the research design and methodology. Chapter four details the data analysis process, while chapter five discusses the results and findings. Finally, chapter six summarizes the findings, offers conclusions, and provides suggestions for further research on the topic.

Chapter 2: Literature Review

2.1 Introduction to Online Learning

Authors have defined online learning in varying ways. However, a common thread among these definitions is using the Internet and digital platforms to facilitate learning outside a traditional classroom setting. It encompasses a range of methods and technologies, including virtual classrooms, web-based courses, and interactive learning modules.

According to Thorne (2004), online learning is the provision of educational material through the Internet, which includes online learning programs similar to other forms of distance learning and online learning portals that guide users through various online and offline provisions. It involves web-based training (WBT), which uses the internet to deliver training packages and virtual classrooms, where learners can interact with multimedia content and each other. Online learning is characterized by high-quality and engaging content. It is often broken down into bite-sized chunks known as learning objects, allowing learners to access the necessary information.

Weller (2003) also provides an alternative definition, defining online learning as an alternative form of education that accommodates the needs of both students and universities, offering the potential for educational quality that competes with campus courses. It is not inferior to traditional face-to-face teaching and can maintain quality through educator involvement and scrutiny. The author emphasizes that online education should not be seen merely as a delivery mechanism but as an interactive medium facilitating knowledge creation through dialogue and interaction.

Isaias et al. (2020) state that online learning is education that can be pursued anytime and anywhere, aligning with the demands of a digital society. It is characterized by increased flexibility and broader access to educational resources, assisting students in integrating into a digital workforce and becoming proficient digital citizens. From the above definitions of online learning, the critical attribute is that the educational material and content are delivered through the Internet and may or may not provide interactive and direct access to the instructor.

Online learning is delivered through Learning Management Systems (LMS), software applications designed to facilitate the management, delivery, and measurement of an organization's educational courses and training programs. While Moodle and Canvas are two of the most popular LMS software platforms, several significant players also provide unique features and capabilities.

2.2 Forms of Online Learning

Forms of online learning include synchronous online learning, asynchronous learning, blended learning, and Massive Open Online Courses (MOOCs) (Garrison, 2017):

2.2.1 Synchronous Online Learning

Synchronous learning involves real-time interaction between instructors and students, often through video conferencing or live chat. This format allows for immediate feedback and dynamic discussions, closely mimicking the traditional classroom experience (Garrison, 2017).

Weller (2003) defines synchronous communication as a form that can save time, particularly for tasks requiring negotiation. It is also beneficial for creating a social identity and for some subject areas where real-time interaction is essential. Synchronous communication technologies include real-time text chat, audio conferencing, video conferencing, and shared workspaces like whiteboards. Synchronous learning is effective in specific subject areas, like learning a foreign language or some management topics, that require interaction in real time to develop necessary skills. Additionally, creating an event, such as a live presentation followed by a question-and-answer (Q and A) session, benefits from the immediacy of synchronous communication.

According to Thorne (2004), synchronous learning is when the learner and the instructor are engaged in the learning process at the same time, such as in virtual classrooms or live webcasts. This type of learning allows for real-time interaction and immediate feedback.

2.2.2 Asynchronous Online Learning

Asynchronous learning, on the other hand, does not require real-time interaction. Instead, it relies on written communication, such as discussion boards, emails, and recorded lectures, allowing students to engage with the material at their own pace. This format is less intimidating and encourages intellectual risk-taking and reflective thinking (Garrison, 2017).

This form of learning provides the highest flexibility and convenience, as learners can access the materials and participate according to their schedules (Thorne, 2004). However, this online learning mode lacks the synchronous component where the educators are not readily available to address any questions or queries the students might have while pursuing their education via the learning management system.

2.2.3 Blended Learning

Blended learning combines various elements, including multimedia technology, CD-ROM video streaming, virtual classrooms, voicemail, email, conference calls, online text animation, and video streaming (Thorne, 2004). This definition is part of a broader understanding of blended learning, which integrates online learning with traditional methods to tailor learning and development to individual needs. This form of online learning utilizes innovative technological advances to complement traditional interaction and participation (Thorne, 2004).

According to Garrison (2017), this approach extends time on a task beyond the traditional classroom and encourages greater participation and a sense of belonging among learners. Blended learning can be particularly effective in large enrollment courses by replacing some or all lectures with online activities and assignments, thereby enhancing interaction and collaboration.

2.2.4 Massive Open Online Courses (MOOCs)

According to Garrison (2017), Massive Open Online Courses (MOOCs) are a revolutionary form of online learning that offers free or low-cost courses to a large number of participants worldwide. MOOCs enable a new pedagogy by providing accessible and flexible learning opportunities, often incorporating both synchronous (real-time) and asynchronous

(self-paced) elements. MOOCs allow learners to engage with course materials, participate in live sessions, or complete assignments at their own convenience, making education more adaptable to individual schedules (Mahmod et al., 2018).

Liyanagunawardena (2015) also states that MOOCs are typically facilitated by an instructor who guides the learning process, provides expert knowledge, and curates the course content. These courses often come from prestigious universities, colleges, and organizations, lending a high level of credibility and quality to the educational experience. Instructors may offer pre-recorded lectures, live Q&A sessions, and supplementary readings, creating a comprehensive learning environment. The incorporation of multimedia content, such as videos, interactive simulations, and quizzes, enhances the learning experience by catering to various learning styles. According to Liyanagunawardena et al. (2013) one of the defining features of MOOCs is their emphasis on flexibility and accessibility. Learners from diverse geographical locations and backgrounds can access high-quality education without the need for physical attendance. This global reach fosters a diverse learning community where participants can share perspectives and insights, enriching the overall educational experience. Moreover, MOOCs often have minimal prerequisites, making them accessible to individuals who might not have the traditional qualifications needed for higher education.

Interactive elements, such as discussion forums, peer assessments, and group projects, are integral to many MOOCs. These components encourage learners to engage actively with the course content and with each other, promoting a collaborative learning environment. However, participation in these interactive elements is often optional, allowing learners to choose their level of engagement based on their personal preferences and time constraints. This flexibility is particularly beneficial for working professionals or those with other commitments Liyanagunawardena et al. (2013)

Despite their numerous advantages, MOOCs face several challenges. One of the most significant issues is the low completion rate. Many learners enroll in MOOCs out of curiosity or for specific knowledge but do not complete the course. The open and flexible nature of MOOCs can sometimes lead to a lack of motivation and commitment. Additionally, the quality and depth of MOOCs can vary widely. While many courses are developed by reputable institutions, others may lack the rigor and comprehensive coverage found in traditional in-person courses (Wu & Gao, 2018).

Assessment and credentialing present another challenge for MOOCs. Providing meaningful assessments that accurately measure learners' understanding and skills can be difficult in an online environment. Furthermore, while many platforms offer certificates of completion, the recognition and value of these credentials can vary among employers and educational institutions (Wu & Gao, 2018).

2.3 Benefits and Challenges of Synchronous Online Learning

2.3.1 Benefits of Synchronous Online Learning

By incorporating multimedia elements such as animations and interactive content, online education offers an interactive and engaging experience. This enhancement goes beyond the traditional flat text, providing students with a richer learning experience. Multimedia can deepen understanding and increase student engagement through dynamic visual and interactive tools. It transforms how students interact with course material, promoting deeper comprehension and retention. Overall, leveraging multimedia in online learning can significantly enhance the effectiveness and quality of education delivery (Wang, 2001).

These include:

- **Enhanced interactivity, collaboration, and engagement:** While not consistently replicating the level of interaction in a traditional classroom, live online lectures can still incorporate interactive elements to promote student engagement (Li, 2021). Utilizing features such as polls, breakout rooms for group discussions, or whiteboards for collaborative note-taking can foster active learning and knowledge construction within the online environment. According to Garrison (2017), enhanced interaction and engagement are possible by allowing real-time communication between instructors and students. This immediacy helps build a sense of community and belonging among learners, which is crucial for a collaborative and supportive learning environment. The ability to ask questions and receive immediate feedback encourages active participation and intellectual risk-taking, making the learning experience more dynamic and interactive.

- **Flexibility and Convenience:** Students can attend classes from any location, eliminating the need for commuting and allowing them to balance their studies with other responsibilities such as work or family. This flexibility is particularly beneficial for commuter students who can reduce travel time without compromising the quality of their educational experience (Garrison, 2017).
- **Improved scalability and cost-effectiveness:** Live online lectures can accommodate larger student enrollments than traditional classrooms, potentially increasing access to higher education opportunities. This scalability can be particularly beneficial for universities striving to expand enrollment without significant infrastructural investment (Moloney & Oakley, 2010).
- Online learning can create a richer learning experience beyond flat text. Multimedia allows for animations and interactive content, making the student's learning more prosperous and more engaging (Wang, 2001).
- Learners can interact with tutors and peers, enhancing the learning experience. It can create a sense of participation in live events, like guest speaker presentations followed by real-time Q&A sessions, which can be archived for later reference (Weller, 2003)
- Particularly suitable for subjects that necessitate real-time interaction, such as foreign language learning and some management topics (Weller, 2003)

2.3.2 Challenges of Synchronous Online Learning

While synchronous online learning offers the advantage of real-time interaction and immediate feedback, it also presents several challenges that must be addressed to ensure an effective and inclusive learning experience (Garrison, 2017; Weller, 2003).

The primary challenges of synchronous learning based on past empirical studies include:

- **Technological issues** - a significant challenge in synchronous online learning. These include problems with internet connectivity, software compatibility, and hardware limitations, which can disrupt the learning process and hinder effective communication. Ensuring that all participants have access to reliable technology is crucial for the success of synchronous sessions (Garrison, 2017). Furthermore, audio and video conferencing quality can be poor unless high-bandwidth connections are

used, which may require students to attend a physical place, thus reducing the convenience of online learning (Weller, 2003).

- **Coordinating live sessions** - accommodating participants from various time zones or different schedules can be difficult, often leading to scheduling conflicts and reduced participation. This can limit the inclusivity and accessibility of synchronous online learning (Garrison, 2017).
- **Consistency of attendance** - the need for real-time interaction requires participants to be available at specific times, which can be restrictive and less flexible compared to asynchronous learning. This can be particularly challenging for students with other commitments, such as work or family responsibilities, making it harder to attend live sessions consistently (Garisson, 2017)
- **Difficulties in establishing rapport** - due to the lack of face-to-face interaction between students and teachers, there are reduced opportunities for personalized communication and feedback (Weller, 2003)
- **Less opportunity to reflect and respond** - the immediacy of synchronous communication means less opportunity to reflect and compose thoughtful messages, which can benefit many students and result in losing the flexibility in study patterns that net-based education typically offers (Weller, 2003). According to Garrison (2017), the immediacy of synchronous communication can create pressure for both instructors and students to respond quickly, which may not always be conducive to thoughtful reflection and deep learning and the fast-paced nature of live interactions can sometimes lead to superficial engagement rather than meaningful discourse.

2.4 The Community of Practice (CoI) Framework

2.4.1 Introduction

The Community of Inquiry (CoI) framework is a theoretical model developed to understand and foster effective online learning environments. Initially conceptualized by Garrison et al. (2000), the CoI framework provides a comprehensive structure for analyzing the essential elements contributing to a successful online educational experience. It is based on the principles of constructivist learning theory, which emphasizes the importance of social interaction and collaborative learning in the construction of knowledge.

2.4.2 Core Elements of Community of Inquiry (CoI) Framework

The Community of Inquiry (CoI) framework is central to understanding the dynamics of effective online learning. It encompasses three core elements:

- Cognitive Presence
- Social Presence
- Teaching Presence

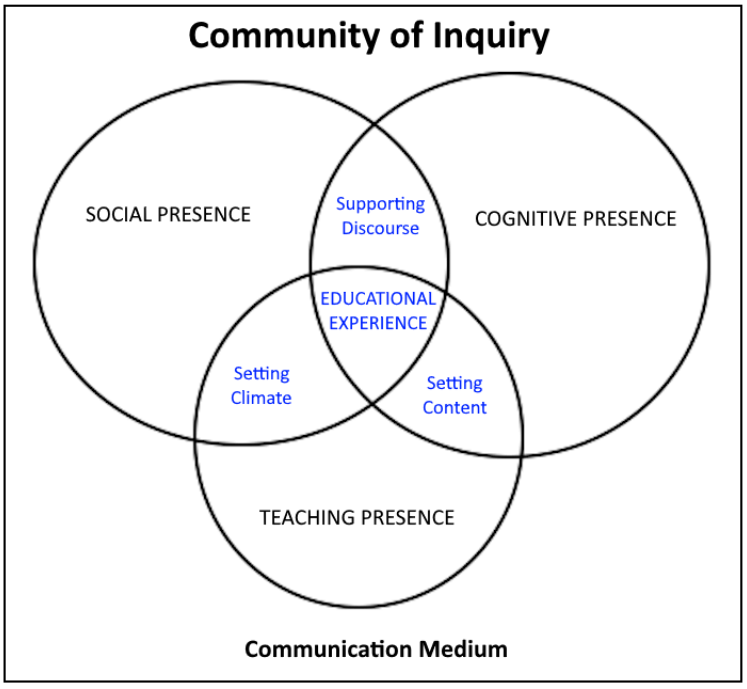

Figure 1: Elements of an educational experience (Garrison et al., 2000)

I. Cognitive Presence

Cognitive presence is defined by the inquiry process, where learners are tasked with a problem or issue and, through iteration between discourse and reflection (public and private worlds), construct meaning and confirm understanding. This refers to how learners construct and confirm meaning through sustained reflection and discourse (Garrison et al., 2001). The authors highlighted that cognitive presence relies on well-structured course materials and engaging discussions. Collaborative learning approaches help deepen understanding.

According to Garrison (2009), Cognitive Presence is sub-divided into 4 categories which are briefly described below:

1. **Triggering Event** - recognizing and defining the problem or issue. This ignites a curiosity on the part of the learner, indicated by a sense of puzzlement and active thinking.

2. **Exploration** - the exploration of the problem or issue by gathering relevant information and perspectives through individual searches and discourse. This is indicated mainly through information exchange.

3. **Integration**—This category consists of making sense of the existing information with the goal of reaching a resolution through reflection, sharing, and critically analyzing the best ideas and creating connections between them.

4. **Resolution**—The fourth phase is to test the best solution through the application, either vicariously or directly.

These phases guide the progression from recognizing a problem or question, exploring relevant information, integrating ideas to form a coherent understanding, and applying new knowledge to solve problems or make decisions.

In summary, Cognitive presence is the extent to which learners can construct and confirm meaning through sustained reflection and discourse. It represents the critical thinking and knowledge-construction processes in a learning community.

II. Social Presence

Social Presence refers to the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop interpersonal relationships by projecting their individual personalities. It is the degree to which participants feel connected and able to express themselves socially and emotionally. Social presence is crucial for building a sense of community and belonging, which can enhance motivation and engagement. Key indicators of social presence include open communication, group cohesion, and the ability to express emotions. Participants can identify with the community, communicate purposefully, and establish meaningful relationships (Garrison et al., 2000). According to the proponent of the CoI framework, social presence significantly enhances students' perceived learning and sense of community.

The Social presence element has three categories:

1. Open Communication – learning climate/risk-free expression
2. Group Cohesion – group identity/collaboration brought forward by open communication.
3. Personal / Affective – self-projection and free expression of emotions.

III. Teaching Presence

Teaching presence involves designing, facilitating, and directing cognitive and social processes to achieve meaningful learning outcomes. It encompasses both the instructional design and organization of the course as well as the facilitation of learning and direct instruction. Teaching presence is essential for creating a structured and supportive learning environment, guiding learners through the educational experience, and ensuring learning objectives are met (Garrison et al., 2000).

Key aspects of teaching presence include setting clear expectations, providing timely feedback, and fostering an environment conducive to active learning.

The teaching presence is the instructor's role in the design, facilitation, and direction of cognitive and social processes to achieve meaningful educational outcomes (Garrison et al., 2000). Shea & Bidjerano (2010) demonstrated a strong correlation between teaching presence

and student satisfaction. Effective facilitation and instructional design play crucial roles in promoting positive learning experiences.

According to Garrison et al. (2000) the dimensions of the teaching presence element are:

1. **Design & Organization** – designing and organizing the course material and setting curriculum and methods.
2. **Facilitating Discourse** – creating optimal learning environment shaping constructive exchange.
3. **Direct Instruction** – delivery of the material, focusing, and resolving issues.

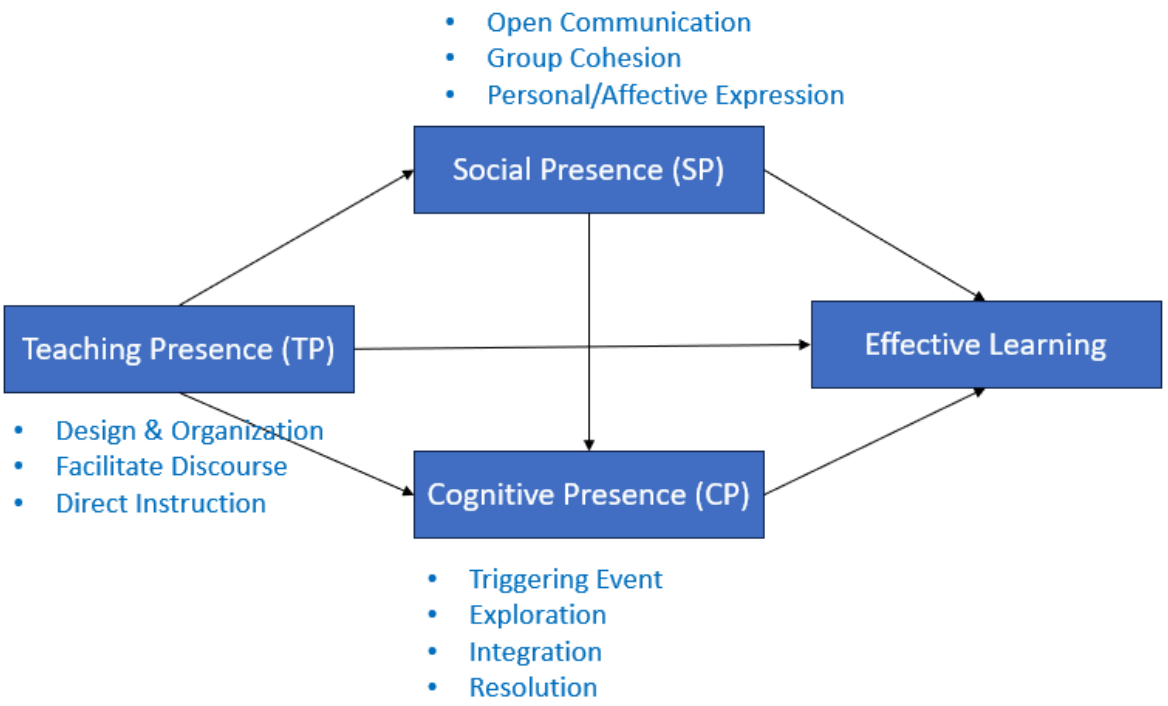

Figure 2: Elements and categories of Communities of Inquiry in Online Learning (Garrison et al., 2000)

2.4.3 Interaction and Interdependence

The three elements of the CoI framework are highly interdependent and interact dynamically to create a holistic learning experience. Effective online learning environments require a balanced integration of social, cognitive, and teaching presences. For instance, a strong social presence can enhance cognitive presence by encouraging open communication and

collaboration. Similarly, effective teaching presence can support and nurture social and cognitive presences by providing structure and guidance (Garrison et al., 2002).

2.4.4 Applications of the CoI Framework

The CoI framework has been widely adopted in research and practice to assess and improve the quality of online education. It is a valuable tool for instructional designers, educators, and researchers to evaluate and enhance various aspects of online courses. The framework can be used to design engaging and interactive online learning experiences, develop assessment tools to measure the effectiveness of online instruction, and identify areas for improvement in online course delivery (Garrison et al., 2000).

Research studies utilizing the CoI framework have demonstrated its effectiveness in fostering a sense of community, promoting deep learning, and improving student satisfaction and retention in online courses. By focusing on the interplay of social, cognitive, and teaching presences, educators can create online learning environments that are not only informative but also supportive and engaging (Garrison et al., 2010)

The Version 14 Community of Inquiry (CoI) Questionnaire is a validated instrument developed to measure the three core elements of the CoI framework—Cognitive Presence, Social Presence, and Teaching Presence—in online learning environments. The questionnaire consists of 34 items distributed across the three elements, with each item designed to assess specific dimensions of these presences (Arbaugh et al., 2008).

Cognitive Presence items focus on students' engagement in critical thinking and knowledge construction. Social Presence items assess the degree of students' interpersonal communication and emotional expression. Teaching Presence items evaluate the effectiveness of instructional design, facilitation, and direct instruction (Garrison et al., 2000).

The questionnaire uses a Likert scale to gauge respondents' perceptions, providing a comprehensive tool for educators and researchers to evaluate and enhance the quality of online learning experiences.

In summary, the Community of Inquiry framework provides a robust and comprehensive model for understanding and enhancing online learning environments. By emphasizing the

critical roles of social presence, cognitive presence, and teaching presence, the CoI framework offers valuable insights into the design and delivery of effective online education.

The Community of Inquiry (CoI) framework, developed by Garrison, Anderson, and Archer in 2000, is a comprehensive model designed to facilitate effective online learning. It focuses on three interdependent elements: Cognitive Presence, Social Presence, and Teaching Presence.

Cognitive Presence refers to the extent to which learners can construct and confirm meaning through sustained reflection and discourse (Garrison et al., 2000).

Social Presence is the ability of participants to identify with the community, communicate purposefully, and develop interpersonal relationships (Garrison et al., 2000).

Teaching Presence encompasses the design, facilitation, and direction of cognitive and social processes to achieve meaningful learning outcomes (Garrison et al., 2000).

Integrating these three elements, the CoI framework aims to create a cohesive and supportive online learning environment promoting deep and meaningful educational experiences. As online learning continues to grow in importance and prevalence, the CoI framework will remain vital for educators and researchers striving to create meaningful and impactful online learning experiences.

Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology employed in this study to investigate the factors influencing the effectiveness of live online classes among MBA students and instructors at AAU, CoBE. It details the research design, sampling strategies, data collection instruments, and data analysis procedures.

3.2 Research Approach

The aim of this study is to examine the perceived effectiveness of the live online classes among AAU, CoBE, 2020/2021 MBA students. According to Creswell & Cresswell (2023), three approaches that can be used to undertake research are quantitative, qualitative and mixed approaches. According to the authors, the qualitative research approach primarily focuses on collecting quantitative data, a systematic record that consists of numbers constructed by the researcher utilizing the process of measurement and imposing structure while qualitative data cannot be measured. The mixed approach utilizes both the qualitative and quantitate approaches. Mixed-method research involves gathering, analyzing, and integrating both quantitative and qualitative (open-ended) data in a single study or series of studies (Creswell & Creswell, 2023).

This study applies the mixed research. The reason for using the combination of both quantitative and qualitative data is to better understand a research problem by combining both numeric values from quantitative research and the detailed information from qualitative research and to augment limitations of applying a single approach.

3.3 Research Design

The data was analyzed using descriptive statistics, and a Partial Least Square Structural Equation Modeling (PLS-SEM) was done using the SmartPLS software (version 4) to validate the relationship between the elements defined in the Community of Practice (CoI) framework.

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a non-parametric statistical modeling technique that analyzes complex relationships between observed and latent variables. It is beneficial for exploratory research and prediction-oriented studies due to its flexibility and minimal assumptions regarding data distribution and measurement scales (Hair et al., 2022).

PLS-SEM is highly effective for analyzing and identifying relationships between constructs because it focuses on maximizing the explained variance (R^2 values) of dependent variables. This is achieved through the iterative estimation of path coefficients, which reflect the strength and direction of relationships between constructs. The method's ability to handle complex models and various data types, including reflective and formative indicators, makes it particularly suited for predictive modeling and exploratory research.

3.3 Population Size

The target population includes all postgraduate Business students enrolled at AAU and CoBE for the year 2020/2021, a total of 150 students. Due to the small population size, the study has employed the census method of data collection. As such the data collection questionnaire has been distributed to all individuals in the population and data from 111 respondents (74%) response rate has been obtained.

3.4 Data Collection Instruments

In this study, data collection is facilitated through a self-administered online survey designed to gather quantitative and qualitative data from student and instructor participants. The survey instruments are based on the reputable Community of Inquiry (CoI) Survey Questionnaire (version 14), which is well-regarded in educational research for its comprehensive evaluation of online and blended learning environments.

Design of the Survey Instruments

To ensure comprehensive data collection, two distinct questionnaires were developed: one targeting students and the other targeting instructors. Both questionnaires were hosted on the Google Forms platform, which provides an accessible and user-friendly interface for

participants. Using Google Forms also ensures efficient data collection and management, with automated data entry and real-time response tracking.

Structure and Content of the Questionnaires

The questionnaires incorporate five-point Likert-scale questions to quantify participants' perceptions regarding various aspects of online learning. The Likert scale ranges from "strongly disagree" to "strongly agree," allowing for nuanced responses that capture the depth of participants' experiences and attitudes. This approach effectively quantifies subjective perceptions and provides a robust dataset for subsequent statistical analysis.

Student Questionnaire

The student questionnaire gathers detailed information about the learners' experiences and perceptions of online classes and their overall perception of the effectiveness of online learning.

Key areas of focus include:

1. **Demographic Information:** Collecting data on the students' background, including age, gender, marital status, and educational qualifications.
2. **Cognitive Presence**: Assessing the extent to which students are able to construct and confirm meaning through sustained reflection and discourse.
3. **Social Presence**: Evaluating the ability of students to project their personal characteristics into the community, thereby presenting themselves as individuals.
4. **Teaching Presence**: Measuring the design, facilitation, and direction of cognitive and social processes to achieve meaningful learning outcomes.
5. **Challenges Faced by Students**: Identifying specific difficulties students encounter during online learning, such as technical issues, engagement barriers, and environmental distractions.
6. **Overall Assessment of Effectiveness**: Gauging students' overall satisfaction and perceived effectiveness of the online classes, including their willingness to participate in future online classes.

In addition to these core areas, the student questionnaire includes open-ended questions to capture qualitative data, providing richer insights into the students' experiences and challenges.

Instructor Questionnaire

The instructor questionnaire is designed to capture the educators' perspectives on various aspects of online teaching. Key areas of focus include:

1. **Participant Demographics and General Information**: This section gathers essential background information about the instructors, including their age, gender, teaching experience, and familiarity with online teaching platforms. This demographic data helps contextualize the instructors' responses and provides a basis for analyzing variations in experiences and perceptions across different instructor profiles.

2. **Student Engagement and Interaction in Online Classes**: This section evaluates the extent and quality of student engagement and interaction during online classes. It includes questions that measure how effectively students participate in discussions, collaborate with peers, and engage with course materials compared to traditional face-to-face settings. The insights from this section help us understand how online environments impact student behavior and engagement from the instructor's viewpoint.

3. **Level of Satisfaction with Various Aspects of Interactions During Online Lectures Compared to Face-to-Face Classes**: In this section, instructors rate their satisfaction with different aspects of their interactions with students during online lectures. It covers areas such as the effectiveness of communication, the depth of student understanding, and the overall quality of teaching and learning interactions. Comparisons are made with face-to-face classes to highlight any differences or challenges specific to the online format.

4. **Technical Issues**: This section identifies the technical challenges instructors face while conducting online classes. Questions focus on issues such as internet connectivity, software reliability, ease of use of online teaching platforms, and the

adequacy of IT support. Understanding these technical barriers is crucial for improving the online teaching experience and ensuring instructors can effectively deliver their courses.

5. **Overall Satisfaction**: The final section gauges the instructors' overall satisfaction with the online teaching experience. It includes questions about their general perception of online education, their willingness to continue using online platforms, and their recommendations for improving the online teaching and learning environment. This comprehensive view of instructor satisfaction provides valuable feedback for institutional improvements.

In addition to these structured questions, the instructor questionnaire includes open-ended questions to gather qualitative data. These questions allow instructors to elaborate on their experiences, share specific challenges and successes, and provide detailed feedback on the online teaching process.

Language and Accessibility

Both questionnaires are presented in English to maintain consistency and ensure that all participants can effectively engage with the survey content. The choice of language also reflects the medium of instruction for the MBA program, ensuring respondents are familiar with the terminology and constructs used in the questions.

Pilot Testing and Validation

Before full deployment, the questionnaires were pilot-tested with 15 records to ensure clarity, relevance, and reliability. Appendix C contains the reliability scores of the pilot data showing a high R-squared values for each subconstruct and constructs.

The data collection tools have been attached as appendices to this thesis.

- Appendix A - Student data collection questionnaire
- Appendix B - Instructor data collection questionnaire

3.5 Ethical Considerations

This research has adhered to ethical principles throughout the data collection and analysis. Informed consent was obtained from all participants before their involvement in the study. The anonymity and confidentiality of participants' responses will be ensured. Data will be stored securely and only used for this research.

Chapter 4: Data Analysis

4.1 Introduction and Overview

This chapter presents the analysis and results of the data collected for this study. After distributing the data collection questionnaire in electronic format (Google Forms) to 150 MBA students at Addis Ababa University, College of Business and Economics, 111 complete responses were collected within two weeks (74% response rate). The MBA student's telegram group greatly supported the data collection process by facilitating the process of reaching out to students and following up to ensure sufficient participant responses.

The next section of this chapter provides a demographic description of the respondents of the questionnaire, and the third section provides information about the participants' prior online class experience, their locations for attending online classes, the types of internet connections they used, and the devices they relied on for their online education. Additionally, it covers the online learning platforms utilized by the participants, whether they received training on using these tools, and their regularity in attending online courses. This comprehensive overview helps to contextualize the students' online learning environment and highlights the various factors influencing their educational experiences.

4.2 Demographic Summary of the Respondents

4.2.1 Demographic Summary of Students

The demographic profile of the 111 students in this study reveals a diverse group. Regarding gender distribution, 64% of the respondents were male (n=71), while 36% were female (n=40). The participants' marital status shows a reasonably balanced distribution, with 54% identifying as single (n=60) and 46% as married (n=51). The age group analysis indicates that the majority of respondents (65%) were within the 26-35 years age bracket (n=72), followed by 28% in the 36-45 years range (n=31). A smaller proportion of participants were 46 years and above (4.5%, n=5), and only 2.7% were 25 years or younger (n=3). Regarding educational qualifications, 48% of the respondents held a bachelor's degree (n=53), while 52% possessed a master's degree (n=58).

This demographic distribution provides a comprehensive overview of the participants, reflecting a varied yet predominantly mid-career professional group with substantial academic qualifications.

Table 1: Demographic summary of students

Demographic Category	**Category**	**Frequency**	**Percent**
Gender	Male	71	64%
	Female	40	36%
Marital status	Single	60	54%
	Married	51	46%
Age group (years)	<= 25	3	2.7%
	26 - 35	72	65.0%
	36 - 45	31	28%
	>= 46	5	4.5%
Education	Degree	53	48%
	Master's degree	58	52%

The to obtain supporting background information about the participants, the study further explored various aspects of the students' experiences with online classes, location of attendance, the conduciveness of the attendance location, the internet connection utilized to attend the online classes.

The results show that students with prior experience in online learning and those without account for 46% and 54% of the respondents respectively, with more students having been introduced to online learning at the institute for the first time. Related to this is also the proportion of students who did not have past training in using the tools employed to conduct the online classes, with only 18% having participated in such training and the remaining 82% not exposed to any training in using the tools.

The majority of the participants (68%) used WiFi connection to access online classes while the remaining 32% used mobile data connection, showing about a third of the class relied on mobile data connection, which is more costly and less-reliable in terms of connection speed and the speed varying in different areas of the city.

The devices used to attend the online classes is mostly computer (about 71%) and about 25% relying on smartphone to attend the classes. Given the size of the smartphone devices, attending the courses via smartphone can impact the quality the presentations due to the screen size and might negatively reflect on the perceived satisfaction of students about the online lessons the overall effectiveness of the lessons.

The Google and the Zoom platforms has been applications have been predominantly used to deliver the online lectures with 65% of students reporting to have used Google; 18% attending via Zoom and about 25% using both platforms.

The study also assessed the learning environment/space, with 35% (n=39) of students agreeing and 14.5% (n=16) strongly agreeing that they had a quiet and undisturbed environment to attend online courses. However, 26% (n=29) disagreed and 4.5% (n=5) strongly disagreed with this statement, while 20% (n=22) remained neutral.

The following table summarizes the responses received from the participants in the second section of the questionnaire, which collects data about their online course attendance, internet connection types, and devices utilized by the students during the online class sessions.

Table 2: Summary of students' online learning experiences and preferences

Variable	**Description**	**Options**	**Frequency**	**%**
Q16	Prior online class experience	Yes	51	46%
		No	60	54%
Q22	Location of attendance	Home	84	75.7%
		Office	17	15.3%

		Other (library, internet café, transport)	10	9%
Q23	Internet connection type used	WiFi	76	68%
		Mobile data	35	32%
Q24	Type of device used for online attendance	Desktop computer	2	1.8%
		Laptop computer	77	69.3%
		Tablet	4	3.6%
		Smartphone	28	25.2%
Q25	Online learning platforms	Google	65	59%
		Zoom	18	16%
		Both	28	25%
Q26	Received training using the tools	Yes	20	18%
		No	91	82%
Q27	Course attendance regularity	Almost all courses	52	47%
		Most courses	49	44%
		Missed more courses	10	9%
Q31	I had a quiet and undisturbed environment in which to attend online courses.	Strongly disagree	5	4.5%
		Disagree	29	26%
		Neutral	22	20%
		Agree	39	35%
		Strongly agree	16	14.5%

4.2.2 Demographic Summary of Instructors

The demographic profile of the instructors participating in the study reveals a diverse group in terms of age, academic qualifications, and teaching experience. The summary data below provides insights into their background, which is essential for understanding their perspectives on online teaching.

Table 3: Demographic summary of instructors

Demographic Category	**Category**	**Frequency**	**Percentage**
Gender	Male	5	83.3%
	Female	1	16.7%
Age group	36 - 45 years	5	83.3%
	46 - 50 years	1	16.7%
Academic qualification	Ph.D.	6	100%
Teaching experience	3-5 years	1	16.7%
	11-15 years	2	33.3%
	16-20 years	1	16.7%
	More than 20 years	2	33.3%
Number of online courses taught	1 course	1	16.7%
	2 - 3 courses	2	33.3%
	4 or more courses	3	50%
Received training	Yes	5	83.3%
	It was not necessary	1	16.7%

The data collected from six instructors provides an overview of their online teaching practices. The locations where instructors conduct their online teaching are evenly distributed, with 33.3% of instructors teaching from home, 33.3% from the office, and 33.3%

from both home and office. Regarding internet connection types, the data shows that half of the instructors use WiFi exclusively, while the other half use a combination of WiFi, mobile, wired, and broadband connections.

All six instructors use laptop computers to deliver their online courses, indicating a uniform choice of device. Regarding online learning platforms, 33.3% of instructors use Google exclusively, while 66.6% use both Google and Zoom.

Table 4: Summary of Instructors' online teaching environment

Variable	**Description**	**Options**	**Frequency**	**%**
Q22	Location of attendance	Home	2	33.3%
		Office	2	33.3%
		Both	2	33.3%
Q23	Internet connection type used	WiFi	3	50%
		Mixed: WiFi, Mobile, Wired, Broadband	3	50%
Q24	Type of device used for online teaching	Laptop computer	6	100%
Q25	Online learning platforms	Google	2	33.3%
		Zoom	0	0%
		Both	4	66.6%

4.3 Analysis of Research Questions

4.3.1 Student-Instructor Satisfaction Ratings

Research Question 1: What are the students' and instructors' overall satisfaction levels in the live online classes?

A. Students' Overall Satisfaction with Online Classes

The study sought to measure the students' perceptions of the effectiveness of live online classes through a series of carefully designed questions. The questions aimed to capture various aspects of their learning experiences, including their understanding of the material, preparedness for exams and assignments, overall satisfaction, and willingness to participate in future online courses. The following is a detailed analysis of the responses to these questions.

Understanding of materials presented in online lectures

The question "I understood the material presented in the online lectures well" was used to gauge how well students comprehended the content delivered through online classes. The responses, measured on a five-point Likert scale ranging from "strongly disagree" to "strongly agree," revealed a generally positive perception. A significant majority of students, 55%, agreed that they understood the material well, while an additional 5.4% strongly agreed. However, some students found the material challenging, with 14.4% disagreeing and 1.8% strongly disagreeing. A notable 23.4% of respondents remained neutral, indicating that while the majority found the material comprehensible

Preparedness for exams and assignments

The effectiveness of online lectures in preparing students for exams and assignments was assessed through the statement, "The online lectures have effectively prepared me for the exams and assignments given in the course." The responses indicated mixed feelings among the students. Only 2.7% strongly agreed, and 30.6% agreed that the online lectures were effective in this regard. On the other hand, a significant 36% disagreed, and 6.3% strongly disagreed, highlighting concerns about the adequacy of online instruction in preparing students for assessments. The neutral responses constituted 24.3%, suggesting that nearly a

quarter of the students were unsure about the effectiveness of their preparation through online lectures. This indicates a need to enhance the quality of online teaching to better prepare students for their academic evaluations.

Overall satisfaction with online learning

The overall satisfaction with online learning was measured using the question "Overall rating of perceived satisfaction on online learning," with responses ranging from "very ineffective" to "very effective." The data showed diverse opinions, with a significant portion of students expressing satisfaction. Specifically, 45% of students rated the online learning experience as effective, and 12% found it very effective. Conversely, 23% of students rated it ineffective and 4.5% very ineffective, indicating that nearly a quarter of the participants were dissatisfied with the online learning format. Additionally, 15.5% of students provided a neutral rating, reflecting ambivalence about their overall satisfaction. These findings underscore the varied experiences of students in online learning environments and the importance of addressing the concerns of those who are dissatisfied.

Willingness to take future online courses

The question "Would you choose to take future online courses?" aimed to understand the students' willingness to continue with online learning in the future. The responses were quite positive, with 75.7% of students willing to participate in future online courses. This high percentage suggests that despite some of the challenges and dissatisfaction expressed in other areas, most students see value in online learning and are open to continuing with this mode of education. However, 24.3% of respondents expressed reluctance to take future online courses, highlighting the need for improvements to enhance the online learning experience and address the concerns that might deter some students.

The study's findings reveal a generally positive perception of the effectiveness of online classes among MBA students, with significant proportions expressing satisfaction and willingness to continue with online learning. However, there are notable areas of concern, particularly regarding the adequacy of online lectures in preparing students for exams and assignments and the overall satisfaction levels of a significant minority. Addressing these issues through targeted improvements in online teaching methodologies and support systems can help enhance the overall effectiveness and acceptance of online learning among students.

Table 5: Student ratings of online class effectiveness

Variable	Description	Options	Frequency	%
Q311	I understood the material presented in the online lectures well.	Strongly disagree	2	1.8%
		Disagree	16	14.4%
		Neutral	26	23.4%
		Agree	61	55%
		Strongly agree	6	5.4%
Q312	The online lectures have effectively prepared me for the exams and assignments given in the course.	Strongly disagree	7	6.3%
		Disagree	40	36%
		Neutral	27	24.3%
		Agree	34	30.6%
		Strongly agree	3	2.7%
Q81	Overall rating of perceived satisfaction on online learning.	Very ineffective	5	4.5%
		Ineffective	26	23%
		Neutral	17	15.5%
		Effective	50	45%
		Very effective	13	12%
Q82	Would you choose to take future online courses	Yes	84	75.7%
		No	27	24.3%

B. Instructors' Satisfaction with Online Classes

Overall Experience of Conducting Live Online Classes

The responses to the question regarding overall satisfaction with conducting live online classes compared to traditional face-to-face classes reveal various experiences among the instructors. Of the six instructors surveyed, one reported being dissatisfied, two were neutral, and three expressed satisfactions with their experience. This indicates that while half of the instructors had a positive experience with live online classes, a significant portion either felt neutral or dissatisfied, highlighting varying levels of acceptance and comfort with this teaching mode.

Table 6: Instructors' satisfaction with the overall experience of conducting online classes

How satisfied are you with your overall experience conducting live online classes compared to traditional face-to-face classes?
Very Dissatisfied: 0
Dissatisfied: 1
Neutral: 2
Satisfied: 3
Very Satisfied: 0

Likelihood of Conducting Live Online Lectures in the Future

When asked about the likelihood of conducting live online lectures in the future, the instructors' responses were again mixed. Two instructors indicated that they were unlikely to choose online lectures; one was neutral, two were likely, and one was very likely to do so. This distribution shows that some instructors are cautiously open to continuing with online teaching. However, there are also reservations among others, which may be influenced by their past experiences and the perceived effectiveness of online classes.

Table 7: Instructors' likelihood of conducting online lectures in the future

How likely are you to choose to conduct live online lectures in the future, given your past experiences?
Very Unlikely: 0
Unlikely: 2
Neutral: 1
Likely: 2

Very likely: 1

Primary Reason for Reluctance

For the instructors who responded as 'Unlikely' or 'Very unlikely' to conduct live online lectures in the future, the primary reason given was the nature of the courses they teach. These instructors indicated that their courses require the use of teaching aids such as whiteboards and necessitate interactive roles from students, which they find challenging to implement effectively in an online setting. This highlights a specific barrier to online teaching for certain types of courses that depend heavily on in-person interactions and physical teaching tools.

Overall. the data suggests diverse experiences and attitudes towards live online classes among the instructors at Addis Ababa University's College of Business and Economics. While some instructors are satisfied and open to continuing with online teaching, others face challenges that make them less likely to prefer this mode of delivery. Addressing these challenges, particularly those related to the need for interactive teaching aids, could help improve overall satisfaction and acceptance of live online classes in the future.

4.3.2 Primary Challenges of Online Learning

Research Question 2: What are students' and instructors' primary challenges during AAU's online teaching/learning process?

This section summarizes the challenges the students and instructors face during the institution's online teaching and learning process.

A. Students' Challenges

The questionnaire included several questions to understand students' challenges regarding regular attendance and technical difficulties in online classes. Three specific questions addressed these areas: Q75 focused on the difficulty of attending online classes regularly, Q76 examined the extent to which technical difficulties disrupted the learning experience, and Q78 assessed the impact of technical problems on the overall quality of online classes.

For question Q75, which asked whether it was challenging to attend online classes regularly, 11.7% of students strongly disagreed, and 46.85% disagreed, indicating that over half of the

respondents did not find regular attendance challenging. However, 23.42% agreed, and 3.6% strongly agreed, highlighting that nearly a quarter faced difficulties, with 14.41% remaining neutral.

Regarding question Q76, on whether technical difficulties frequently disrupted the learning experience, 4.5% of students strongly disagreed, and 29% disagreed. Meanwhile, a notable 37% agreed, and 7% strongly agreed, suggesting that technical issues were a significant problem for 44% of respondents. The remaining 22.5% were neutral on this issue.

In response to question Q78, which assessed the impact of technical problems on the quality of online classes, 3.6% strongly disagreed, and 31.5% disagreed, indicating that about a third of the students did not see a significant impact. Conversely, 38.7% agreed, 11.7% strongly agreed that technical problems significantly affected the quality, with 14.4% remaining neutral.

These findings highlight that while a considerable portion of students did not struggle with attendance, many faced technical issues and related challenges that impacted their online learning experience.

Table 8: Student challenges in online classes

Variable	Description	Options	Frequency	%
Q75	It was difficult for me to attend online classes regularly.	Strongly disagree	13	11.7%
		Disagree	52	46.85%
		Neutral	16	14.41%
		Agree	26	23.42%
		Strongly agree	4	3.6%
Q76	Technical difficulties frequently disrupted my learning experience significantly.	Strongly disagree	5	4.5%
		Disagree	32	29%
		Neutral	25	22.5%
		Agree	41	37%

		Strongly agree	8	7%
Q78	Technical problems significantly impacted the quality of online classes.	Strongly disagree	4	3.6%
		Disagree	35	31.5%
		Neutral	16	14.4%
		Agree	43	38.7%
		Strongly agree	13	11.7%

Participants in the study reported a range of challenges that impacted their online learning experience. A significant issue was the instability and absence of electricity, particularly for those attending classes from work, which necessitated staying at the office after hours to ensure reliable electricity and internet access. Financial challenges were also noted at the beginning of online learning, including the costs of purchasing necessary equipment such as Wi-Fi, laptops, and headsets. However, these initial investments were deemed worthwhile as the learning experience improved.

Several participants cited technical issues such as unreliable internet connections, low connection quality, and frequent internet disruptions. Problems with IT infrastructure and technical difficulties, including sound quality issues and difficulty understanding instructors due to sound problems, were also common. Family and environmental distractions, such as background noise from other participants, children, and relatives, further disrupted the learning process.

Students highlighted issues with the online platforms themselves, including difficulties with instructors showing calculations clearly, a lack of online-friendly presentations, and interruptions from participants unfamiliar with online learning systems such as Zoom or Google Classroom. Additionally, some students experienced problems with the digital learning methodologies used by instructors and noted instances where lectures did not begin on time, reducing the sense of collaboration.

Other logistical challenges included attending classes during transport due to inconvenient class timings, dead phone batteries during sessions, and needing to stay muted due to

interactions at home. Power outages and inconsistent connections were particularly disruptive, as were safe environment concerns and noise during online lectures.

These challenges underscore the need for reliable internet and electricity, improved digital literacy among students and instructors, and the adoption of more flexible and hybrid learning models to accommodate diverse student needs and circumstances.

Table 9: Major challenges of online learning

Challenge	Description	Responses	Prevalence
Internet connection	Unreliable internet connection, bad quality audio and video communications, disconnections in the middle of the lecture sessions,	101 (90%)	Very high
Electricity supply interruptions	Unforeseen power disconnections due to electrical faults or undeclared maintenance activities interrupt the power supply and make it impossible to attend scheduled classes.	72 (58%)	High
Computer system	Issues with computer hardware or software, inability to use the speaker or microphone during class, and making open communication necessary for learning difficult.	38 (34%)	Significant

B. Instructors' Challenges

Internet Connectivity Problems

All six instructors reported encountering internet connectivity problems during their online teaching sessions. This issue was consistently noted across all responses, indicating it as a significant and common challenge faced by the instructors.

Electricity Service Outages

Four out of the six instructors mentioned electricity service outages as a technical issue during their online classes. This problem highlights the impact of unreliable power supply on the continuity and effectiveness of online teaching.

Audio and Video Issues

Several instructors pointed out issues related to audio and video quality. Specifically, four instructors noted problems such as poor sound quality and microphone issues, while three mentioned video issues like poor video quality and webcam malfunctions. These technical difficulties affect the overall communication and interaction during the classes.

Platform Crashes and Outages

Two instructors reported experiencing platform crashes or outages, particularly with platforms like Zoom and Microsoft Teams. These issues disrupt the flow of the class and can cause significant delays and interruptions.

Difficulty Sharing Screen or Presentations

Two instructors also encountered difficulties in sharing their screens or presentations during online teaching sessions. This technical hurdle can impede the delivery of visual content, which is often critical for effective teaching.

Hardware Issues

One instructor reported hardware issues, which further complicate the teaching process. Such issues may include problems with the computer or other peripheral devices.

Lack of Technical Support

One instructor mentioned a lack of technical support as an issue during online classes. The absence of timely technical assistance can exacerbate other technical problems and prolong disruptions.

The most prevalent issues faced by the instructors during online teaching sessions were internet connectivity problems, electricity service outages, and audio and video quality issues. Additionally, platform crashes, difficulties with screen sharing, hardware issues, and lack of technical support were also noted. These technical challenges highlight the complexities and barriers to effective online teaching and underscore the need for robust technical infrastructure and support systems to facilitate smoother online education experiences.

4.3.3 Perceived Presence of CoI Framework Elements

Research Question 3: What is the perceived level of presence of the CoI framework's key online learning elements (Cognitive, Teaching, and Social presence) at live online classes at AAU, CoBE.

Cronbach's Alpha statistical test was used to establish the reliability and validity of the items that define the constructs (the three presences) and their sub-elements. The tables below show Cronbach's Alpha values for each construct and sub-construct, and the results show high reliability with Alpha values ranging from 0.675 to 0.908. While the recommended value of Alpha is a minimum of 0.7 (George & Mallery, 2003), authors such as Pallant (2020) have argued that an Alpha level of 0.6 or more can also be regarded as satisfactory.

Based on this result, the set of variables representing each of the three presences in the CoI framework constitutes a reliable and valid construct.

Table 10: Reliability test results for teaching presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Design & Organization	TP_DesgnO1	0.842	0.908
	TP_DesgnO2		
	TP_DesgnO3		
	TP_DesgnO4		
Facilitation	TP_Facil2	0.908	
	TP_Facil3		
	TP_Facil4		
	TP_Facil5		
	TP_Facil6		
	TP_Facil2		
Direct Instruction	TP_DI1	0.795	
	TP_DI2		
	TP_DI3		

Table 11: Reliability test results for social presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Affective Expression	SP_AfEx1	0.686	0.849
	SP_AfEx2		
	SP_AfEx3		
Open Communication	SP_OC1	0.834	
	SP_OC2		
	SP_OC3		
Group Cohesion	SP_GrpC1	0.750	
	SP_GrpC2		
	SP_GrpC3		

Table 12: Reliability test results for cognitive presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Target Event	CP_TrEv1	0.779	0.869
	CP_TrEv2		
	CP_TrEv3		
Exploration	CP_Explr1	0.675	
	CP_Explr2		
	CP_Explr3		
Integration	CP_Intgr1	0.727	
	CP_Intgr2		
	CP_Intgr3		
Resolution	CP_Reso1	0.827	
	CP_Reso2		
	CP_Reso3		

Using the SmartPLS version 4 software, a partial least square structured equation model (PLS-SEM) was undertaken to model the interrelationship between the three CoI presences and perceived effectiveness. The resulting model and its attributes are shown below.

To measure the perceived relationship between the three presences of effective online learning and the perceived effectiveness, the effectiveness construct was measured using three items given below:

- The perceived level of understanding of the course materials.
- The perceived levels and the extent to which the lectures prepared students for the exams and assignments.
- The perceived overall rating of the effectiveness of online learning

The reliability statistics (Cronbach's Alpha) for this construct was calculated to be 0.808, which is in the acceptable range.

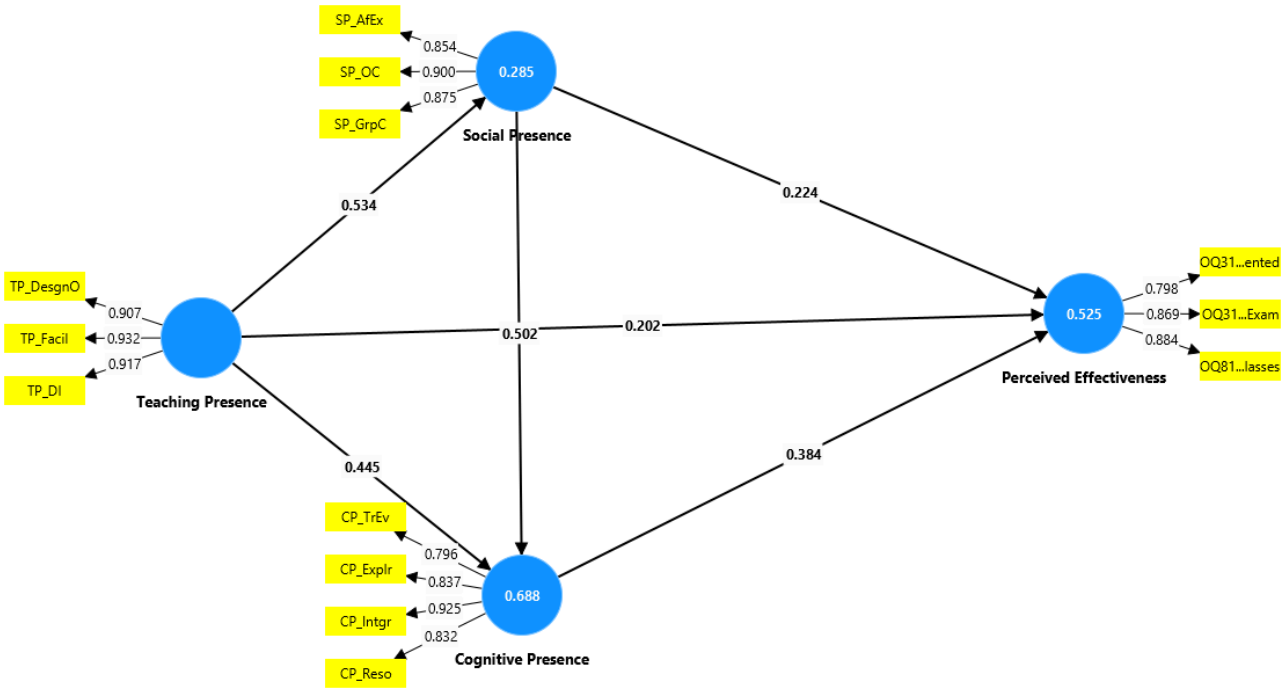

Figure 2: PLS-SEM model for elements of CoI and the perceived effectiveness.

Table 13: Construct level measures of reliability and validity

Construct reliability and validity - Overview				
	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Cognitive Presence	0.869	0.873	0.911	0.720
Perceived Effectiveness	0.811	0.829	0.888	0.725
Social Presence	0.849	0.850	0.908	0.768
Teaching Presence	0.908	0.908	0.942	0.844

Source: Analysis of Survey data, SmartPLS ver. 4

Discriminant Validity

Table 14: Discriminant validity (Heterotrait-monotrait ratio (HTMT) matrix)

	Cognitive Presence	Perceived Effectiveness	Social Presence	Teaching Presence
Cognitive Presence				
Perceived Effectiveness	0.813			
Social Presence	0.859	0.728		
Teaching Presence	0.803	0.695	0.609	

Source: Analysis of Survey data, SmartPLS ver. 4

Collinearity statistics (VIF)

Table 15: Collinearity statistics (VIF) - Inner model

	VIF
Teaching Presence -> Social Presence	1.000
Teaching Presence -> Perceived Effectiveness	2.032
Teaching Presence -> Cognitive Presence	1.399
Social Presence -> Perceived Effectiveness	2.205
Social Presence -> Cognitive Presence	1.399
Cognitive Presence -> Perceived Effectiveness	3.204

Source: Analysis of Survey data, SmartPLS ver. 4

Table 16: Collinearity statistics (VIF) - outer model

	VIF
CP_Explr	2.782
CP_Intgr	4.143
CP_Reso	2.077
CP_TrEv	1.720
OQ311IUnderstoodMaterialPresented	1.598
OQ312OnlineEffectivelyPreparedMeForExam	1.954
OQ81OverallRatingOfSatisfactionOnEffectivenessOfOnlineClasses	1.902
SP_AfEx	1.861
SP_GrpC	2.137
SP_OC	2.355
TP_DI	3.002
TP_DesgnO	2.721
TP_Facil	3.507

To evaluate the validity of the above model parameters, the bootstrapping process was performed with 5000 subsamples, one-tailed, and a significance level of 0.05

The relationships between the constructs are all significant, as the p-values (given in the brackets) are all less than 0.05.

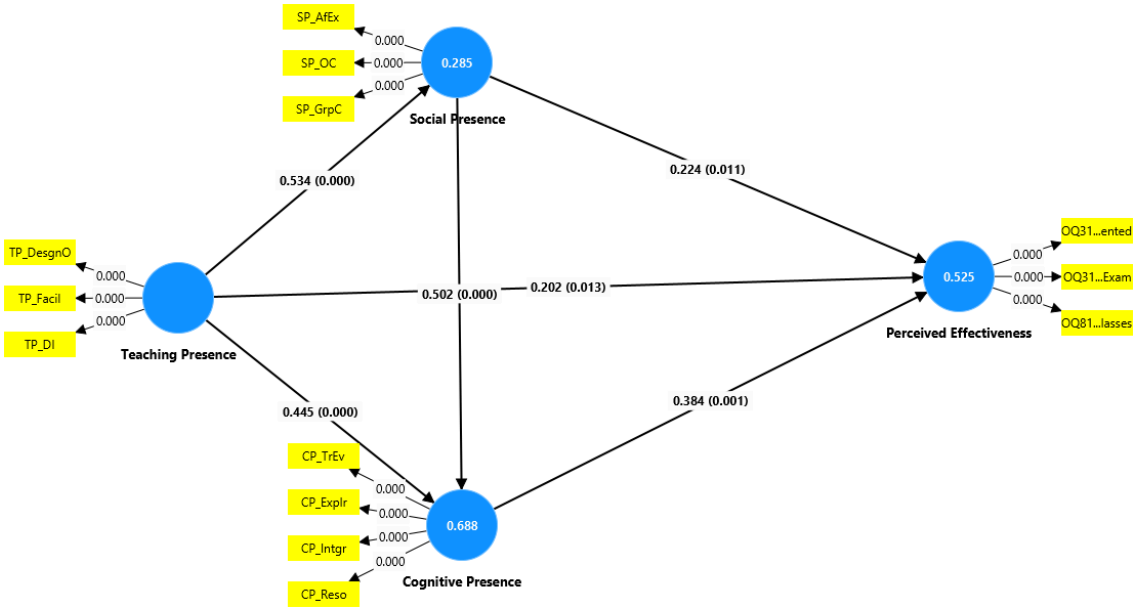

Figure 3: PLS-SEM parameters of the effectiveness of online learning using the CoI framework

Interpretation of the PLS-SEM Model

The provided PLS-SEM model evaluates the relationships between Teaching Presence, Social Presence, Cognitive Presence, and Perceived Effectiveness in an online teaching environment. The numbers on the paths indicate the path coefficients and the values in parentheses are the p-values. The numbers within the circles (constructs) are the R-squared values.

Key Constructs and Relationships:

1. **Teaching Presence to Social Presence:**

   Path Coefficient: 0.534
   p-value: 0.000

   Interpretation: A strong and highly significant positive relationship exists between Teaching Presence and Social Presence. This indicates that an increase in Teaching Presence significantly enhances Social Presence.

2. **Teaching Presence to Cognitive Presence:**

Path Coefficient: 0.445
p-value: 0.000

Interpretation: Teaching Presence also positively and significantly influences Cognitive Presence. Effective teaching strategies contribute to higher levels of cognitive engagement.

3. **Teaching Presence to Perceived Effectiveness:**

Path Coefficient: 0.502
p-value: 0.000

Interpretation: Teaching Presence has a strong and significant direct effect on Perceived Effectiveness. This means that better teaching presence leads to higher perceived effectiveness of online courses.

4. **Social Presence to Perceived Effectiveness:**

Path Coefficient: 0.224
p-value: 0.011

Interpretation: Social Presence positively and significantly affects Perceived Effectiveness. Students' stronger sense of social presence contributes to their perception of the effectiveness of the online course.

5. **Cognitive Presence to Perceived Effectiveness:**

Path Coefficient: 0.384
p-value: 0.001

Interpretation: There is a significant positive relationship between Cognitive Presence and Perceived Effectiveness, indicating that cognitive engagement is a crucial factor in how students perceive the effectiveness of the online course.

6. **Social Presence to Cognitive Presence:**

Path Coefficient: 0.202
p-value: 0.013

Interpretation: Social Presence also significantly affects Cognitive Presence, suggesting that a solid social presence can enhance cognitive engagement.

7. **R-squared Values (Explained Variance):**

Social Presence ($R^2 = 0.285$): Teaching Presence explains 28.5% of the variance in Social Presence.

Cognitive Presence ($R^2 = 0.688$): 68.8% of the variance in Cognitive Presence is explained by combining Teaching Presence and Social Presence.

Perceived Effectiveness ($R^2 = 0.525$): 52.5% of the variance in Perceived Effectiveness is explained by Teaching Presence, Social Presence, and Cognitive Presence.

The model shows that Teaching Presence is a critical factor influencing both Social and Cognitive Presence, significantly impacting the Perceived Effectiveness of online courses. The high R-squared values for Cognitive Presence and Perceived Effectiveness suggest that the model has a strong explanatory power for these constructs. The significant path coefficients indicate that enhancing teaching strategies, fostering social interactions, and engaging students cognitively are essential for improving the overall effectiveness of online education.

Chapter 5: Results and Discussion

5.1 Introduction

In the wake of the global shift towards online education, understanding the intricacies of student and instructor satisfaction with live online classes has become paramount. This chapter delves into the comprehensive analysis and discussion of the results obtained from both students and instructors at Addis Ababa University, College of Business and Economics (AAU, CoBE). By addressing the four core research questions, this study aims to shed light on the overall satisfaction levels, perceived effectiveness of online versus face-to-face classes, primary challenges encountered, and the presence of key elements of the Community of Inquiry (CoI) framework in live online classes.

The transition to online learning has presented unique challenges and opportunities for higher education institutions worldwide. At AAU, CoBE, this transition has necessitated a thorough evaluation of both student and instructor experiences to ensure the effectiveness and sustainability of online education. This chapter provides an in-depth discussion of the quantitative and qualitative data collected through surveys and structural equation modeling, offering valuable insights into the strengths and areas for improvement in the online learning environment. By examining the nuanced perspectives of both students and instructors, this chapter aims to contribute to the broader discourse on enhancing online education practices.

In addressing the research questions, the chapter explores various dimensions of online learning, from satisfaction levels and perceived effectiveness to the specific challenges students and instructors face. The findings highlight critical areas such as engagement, interaction quality, and technical barriers, providing a comprehensive understanding of the online learning landscape at AAU, CoBE. This discussion not only informs institutional strategies for improving online education but also offers a framework for future research and practice in the field of online learning.

5.2 Results

Research Question 1: Overall Satisfaction Levels of Students and Instructors in Live Online Classes

Students' Satisfaction

Analyzing students' satisfaction levels with live online classes reveals a generally positive perception with some areas for improvement. The survey results indicate that a significant majority of students (55%) agreed that they understood the material presented in online lectures well, with an additional 5.4% strongly agreeing. However, 14.4% disagreed and 1.8% strongly disagreed, while 23.4% remained neutral, suggesting that while the majority found the material comprehensible, there is room for improvement in making the content more accessible to all students.

The responses were mixed in terms of preparedness for exams and assignments. Only 2.7% strongly agreed, and 30.6% agreed that the online lectures effectively prepared them for assessments. Conversely, 36% disagreed, and 6.3% strongly disagreed, indicating concerns about the adequacy of online instruction in preparing students for evaluations. The neutral responses constituted 24.3%, suggesting that nearly a quarter of the students were unsure about the effectiveness of their preparation through online lectures.

Regarding overall satisfaction with online learning, 45% of students rated the experience as effective, and 12% found it very effective. However, 23% of students rated it ineffective, and 4.5% very ineffective, indicating that nearly a quarter of the participants were dissatisfied with the online learning format. Additionally, 15.5% of students provided a neutral rating, reflecting ambivalence about their overall satisfaction.

When asked about their willingness to take future online courses, 75.7% of students were willing to participate in future online courses, while 24.3% expressed reluctance. This high percentage of willingness suggests that despite some challenges, most students see value in online learning and are open to continuing with this mode of education.

Instructors' Satisfaction

The responses to the question regarding overall satisfaction with conducting live online classes compared to traditional face-to-face classes reveal various experiences among the instructors. Of the six instructors surveyed, one reported being dissatisfied, two were neutral, and three expressed satisfactions with their experience. This indicates that while half of the instructors had a positive experience with live online classes, a significant portion either felt neutral or dissatisfied, highlighting varying levels of acceptance and comfort with this teaching mode.

When asked about the likelihood of conducting live online lectures in the future, the instructors' responses were again mixed. Two instructors indicated they were unlikely to choose online lectures; one was neutral, two were likely, and one was very likely to do so. This distribution shows that some instructors are cautiously open to continuing with online teaching. However, there are also reservations among others, which may be influenced by their past experiences and the perceived effectiveness of online classes.

For the instructors who responded as 'Unlikely' or 'Very unlikely' to conduct live online lectures in the future, the primary reason given was the nature of the courses they teach. These instructors indicated that their courses require the use of teaching aids such as whiteboards and necessitate interactive roles from students, which they find challenging to implement effectively in an online setting. This highlights a specific barrier to online teaching for certain types of courses that depend heavily on in-person interactions and physical teaching tools.

The data suggests diverse experiences and attitudes towards live online classes among students and instructors at Addis Ababa University's College of Business and Economics. While many students and instructors' express satisfaction and are open to continuing with online teaching and learning, there are significant areas of concern, particularly regarding engagement, interaction quality, and the adequacy of online instruction in preparing students for assessments. Addressing these challenges through targeted improvements can help enhance overall satisfaction and acceptance of live online classes in the future.

Research Question 2: Instructors' Perceived Effectiveness: Live Online vs. Face-to-Face Classes

The instructors' perspectives on the effectiveness of live online lectures compared to face-to-face classes reveal a preference for traditional classroom settings. Several key aspects were assessed to understand this preference.

Level of Student Participation:

The instructors' responses varied when asked about their satisfaction with student participation during live online lectures compared to face-to-face classes. One instructor was very dissatisfied, two were dissatisfied, two were neutral, and one was satisfied. This distribution suggests that while a small portion found student participation satisfactory, most had neutral to negative perceptions of student engagement in online settings.

Quality of Interactions:

Regarding the quality of interactions, such as discussions and Q&A sessions between instructors and students, one instructor was very dissatisfied, three were dissatisfied, one was neutral, and one was satisfied. This indicates a general dissatisfaction with the quality of interactions in live online lectures compared to traditional classes, with most instructors finding the interactions less effective online.

Student Engagement and Ease of Interaction:

The level of student engagement with course material and the ease and frequency of interaction between instructors and students were also assessed. For student engagement, two instructors were very dissatisfied, three were neutral, and one was satisfied. For ease and frequency of interaction, two were dissatisfied, three were neutral, and one was satisfied. Both questions reflect a similar trend where most instructors are either neutral or dissatisfied with online engagement and interaction levels.

Effectiveness of Student-to-Student Interactions:

Regarding student-to-student interactions, such as group work and peer discussions, two instructors were very dissatisfied, one was dissatisfied, two were neutral, and one was satisfied. The responses indicate that many instructors find peer interactions less effective in online classes compared to face-to-face settings.

Clarity and Understandability of Communication:

When asked about the clarity and understandability of their communication with students during live online lectures, one instructor was very dissatisfied, one was dissatisfied, and four were neutral. No instructor reported being satisfied, suggesting that clarity of communication is a concern in the online teaching environment.

Overall, the data indicates a preference among instructors for traditional face-to-face classes over live online lectures. Most instructors expressed dissatisfaction or neutrality regarding various aspects of online teaching, such as student participation, quality of interactions, engagement with course material, and clarity of communication. This suggests that while online classes offer flexibility, instructors perceive them as less effective in fostering engagement and interaction than traditional face-to-face classes.

Research Question 3: Primary Challenges of Online Learning

Students' Challenges:

The study identified several key challenges students face during online learning at AAU. Technical difficulties were a significant issue, with many students reporting that technical problems frequently disrupted their learning experience. For instance, 37% of students agreed, and 7% strongly agreed that technical difficulties disrupted their learning, with only 29% disagreeing and 4.5% strongly disagreeing.

Another major challenge was the impact of technical problems on the overall quality of online classes. About 38.7% of students agreed, and 11.7% strongly agreed that technical issues significantly affected the quality of their classes, while 31.5% disagreed and 3.6% strongly disagreed.

Students also faced difficulties with regular attendance due to various constraints. While a majority (46.85%) disagreed that attending online classes regularly was challenging, a significant portion (23.42%) agreed, and 3.6% strongly agreed, indicating that nearly a quarter of the students faced attendance issues.

Participants highlighted several specific challenges, including unstable internet connections, frequent power outages, and problems with IT infrastructure. Financial constraints, such as the cost of purchasing necessary equipment (e.g., Wi-Fi, laptops, headsets), were also noted. Environmental distractions, such as background noise from family members and interruptions from other participants, further disrupted the learning process.

Instructors' Challenges:

Instructors also faced several challenges during online teaching sessions. Internet connectivity problems were a common issue reported by all six instructors. Electricity service outages were noted by four instructors, highlighting the impact of unreliable power supply on online teaching continuity.

Audio and video quality issues were another significant problem, with four instructors mentioning poor sound quality and microphone issues and three noting poor video quality and webcam malfunctions. Two instructors reported platform crashes and outages, disrupting the flow of classes and causing significant delays.

Two instructors also encountered difficulties sharing their screens or presentations, impeding the delivery of visual content. One instructor reported hardware issues, complicating the teaching process further. Additionally, one instructor highlighted the lack of technical support as a challenge, indicating the need for timely assistance to address technical problems.

The challenges faced by students and instructors during AAU's online teaching/learning process highlight the complexities of online education. Technical difficulties, such as unstable internet connections and power outages, significantly disrupt the learning and teaching experience. Financial constraints, environmental distractions, and the need for better technical support are also critical issues that must be addressed to improve the overall effectiveness of online education.

Research Question 4: Perceived Presence of CoI Framework Elements

The Community of Inquiry (CoI) framework's key elements—Cognitive Presence, Teaching Presence, and Social Presence—were assessed to understand their perceived levels in live online classes at AAU, CoBE.

Reliability and Validity:

Cronbach's Alpha statistical test was used to establish the reliability and validity of the items defining the constructs and their sub-elements. The results showed high reliability, with Alpha values ranging from 0.675 to 0.908. This indicates that the set of variables representing each of the three presences in the CoI framework constitutes a reliable and valid construct.

PLS-SEM Model Interpretation:

Using the SmartPLS software, Partial Least Square Structural Equation Modeling (PLS-SEM) was conducted to model the interrelationship between the three CoI presences and perceived effectiveness. The model results show significant relationships between the constructs.

- **Teaching Presence to Social Presence:** There is a strong and highly significant positive relationship (Path Coefficient: 0.534, p-value: 0.000), indicating that an increase in Teaching Presence significantly enhances Social Presence.

- **Teaching Presence to Cognitive Presence:** Teaching Presence also positively and significantly influences Cognitive Presence (Path Coefficient: 0.445, p-value: 0.000).

- **Teaching Presence to Perceived Effectiveness:** Teaching Presence has a strong and significant direct effect on Perceived Effectiveness (Path Coefficient: 0.502, p-value: 0.000).

- **Social Presence to Perceived Effectiveness:** Social Presence positively and significantly affects Perceived Effectiveness (Path Coefficient: 0.224, p-value: 0.011).

- **Cognitive Presence to Perceived Effectiveness:** There is a significant positive relationship between Cognitive Presence and Perceived Effectiveness (Path Coefficient: 0.384, p-value: 0.001).

- **Social Presence to Cognitive Presence:** Social Presence also significantly affects Cognitive Presence (Path Coefficient: 0.202, p-value: 0.013).

R-squared Values:

- Social Presence ($R^2 = 0.285$): Teaching Presence explains 28.5% of the variance in Social Presence.

- Cognitive Presence ($R^2 = 0.688$): Teaching Presence and Social Presence combined explain 68.8% of the variance in Cognitive Presence.

- Perceived Effectiveness ($R^2 = 0.525$): Teaching presence, social presence, and cognitive presence explain 52.5% of the variance in Perceived Effectiveness.

The model demonstrates that Teaching Presence is a critical factor influencing both Social and Cognitive Presence, significantly impacting the Perceived Effectiveness of online courses. The high R-squared values for Cognitive Presence and Perceived Effectiveness suggest that the model has strong explanatory power for these constructs. The significant path coefficients indicate that enhancing teaching strategies, fostering social interactions, and engaging students cognitively are essential for improving the overall effectiveness of online education at AAU, CoBE.

Chapter 6: Conclusion and Recommendations

6.1 Conclusion

The rapid shift to online learning necessitated by the global pandemic has underscored the importance of evaluating live online classes' effectiveness and satisfaction levels. This study at Addis Ababa University, College of Business and Economics (AAU, CoBE) has provided valuable insights into the experiences of both students and instructors. By addressing the four core research questions, the study revealed a diverse range of satisfaction levels, challenges, and the perceived presence of key elements of the Community of Inquiry (CoI) framework in live online classes.

Overall, the findings indicate a generally positive perception of online learning among students, with significant proportions expressing satisfaction and willingness to continue with online learning. However, there are notable areas of concern, particularly regarding the adequacy of online lectures in preparing students for exams and assignments and the overall satisfaction levels of a significant minority. Instructors, on the other hand, displayed a preference for traditional face-to-face classes, citing concerns about student engagement, quality of interactions, and technical issues.

The study also highlighted several key challenges faced by both students and instructors, including internet connectivity problems, electricity service outages, and issues related to audio and video quality. These challenges significantly impact the effectiveness of online teaching and learning, necessitating targeted interventions to improve the overall experience for both students and instructors.

6.2 Recommendations

Based on the findings and discussions, the following recommendations are proposed to enhance the effectiveness of live online classes and address the challenges faced by students and instructors.

1. Improving Internet Connectivity: Given that internet connectivity problems were a significant issue for both students and instructors, it is crucial to enhance the reliability and speed of internet connections. This can be achieved through:

- **Institutional Support:** Universities should partner with internet service providers to offer affordable, high-speed internet packages to students and staff.
- **Infrastructure Investment:** Investing in robust IT infrastructure to ensure stable and high-quality internet access on campus and in remote areas.

2. Mitigating Electricity Service Outages: Frequent power outages disrupted online learning significantly. To mitigate this issue:

- **Backup Power Solutions:** Providing backup power solutions such as UPS systems and portable generators to students and instructors can ensure uninterrupted learning and teaching sessions.
- **Policy Advocacy:** Universities should advocate for more reliable electricity services with local government authorities and utility companies.

3. Addressing Technical Difficulties: Audio and video quality issues, platform crashes, and difficulties in sharing screens were major challenges. To address these:

- **Technical Training:** Offering regular training sessions for students and instructors on effectively using online learning platforms and tools can reduce technical difficulties.
- **Technical Support:** Establishing a dedicated technical support team to provide real-time assistance during online classes can help resolve issues promptly.

4. Enhancing Student Engagement and Interaction: To improve student participation and interaction quality:

- **Interactive Teaching Methods:** Encouraging the use of interactive teaching methods such as breakout rooms, polls, and quizzes can enhance engagement.
- **Facilitation Skills:** Providing instructors with training in online facilitation skills to better manage and engage students in virtual environments.

5. Reducing Environmental Distractions: Environmental distractions were a significant barrier for many students. Possible solutions include:

- **Dedicated Study Spaces:** Encouraging students to create dedicated study spaces at home that are free from distractions.
- **Noise-Canceling Equipment:** Providing or recommending noise-canceling headphones to minimize background noise during classes.

6. Addressing Financial Constraints: Financial barriers to accessing necessary equipment for online learning should be addressed through:

- **Financial Aid Programs:** Establishing financial aid programs to help students purchase laptops, Wi-Fi routers, and other essential equipment.
- **Loan Programs:** Creating low-interest loan programs for students to finance their technology needs.

7. Supporting Cognitive, Social, and Teaching Presences: Based on the CoI framework, enhancing cognitive, social, and teaching presences can significantly improve the perceived effectiveness of online learning:

- **Cognitive Presence:** Integrating problem-based learning and critical thinking exercises in the curriculum can strengthen cognitive presence (Garrison et al., 2000).
- **Social Presence:** Promoting community-building activities and fostering open communication can enhance social presence (Garrison et al., 2000).
- **Teaching Presence:** Ensuring clear instructional design and active facilitation can improve teaching presence (Shea & Bidjerano, 2010).

By implementing these recommendations, AAU, CoBE can significantly improve the overall effectiveness and satisfaction levels associated with live online classes. Addressing the highlighted challenges and leveraging the strengths identified in this study will contribute to a more robust and engaging online learning environment.

References

Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. Journal of Pedagogical Sociology and Psychology, 2(1), 45–51. https://doi.org/10.33902/JPSP

Akour, M., & Alenezi, M. (2022). Higher Education Future in the Era of Digital Transformation. *Education Sciences*, *12*(11), 784. https://doi.org/10.3390/educsci12110784

Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education*, *11*(3–4), 133–136. https://doi.org/10.1016/j.iheduc.2008.06.003

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approach* (Sixth edition). SAGE.

Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, *49*(1), 5–22. https://doi.org/10.1177/0047239520934018

Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, *30*(3), 452–465. https://doi.org/10.1007/s12528-018-9179-z

Garrison, D. R. (2017). *E-learning in the 21st century: A community of inquiry framework for research and practice* (Third edition). Routledge.

Garrison, D. R., Archer, W., & Anderson, T. (2000). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *The Internet and Higher Education*, *2*. https://doi.org/10.1016/s1096-7516(00)00016-6

Garrison, D. R. (2009). Communities of Inquiry in Online Learning. In P. Rogers, G. Berg, J. Boettcher, C. Howard, L. Justice, & K. Schenk (Eds.), *Encyclopedia of Distance Learning, Second Edition* (pp. 352-355). IGI Global. https://doi.org/10.4018/978-1-60566-198-8.ch052

Garrison, R., Anderson, T., Rourke, L., & Archer, W. (2001). ASSESSING TEACHING PRESENCE IN A COMPUTER CONFERENCING CONTEXT. *Online Learning*, *5*(2). https://doi.org/10.24059/olj.v5i2.1875

Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. *The Internet and Higher Education*, *13*(1), 5–9. https://doi.org/10.1016/j.iheduc.2009.10.003

George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference 11.0 update (4th ed.). Boston: Allyn & Bacon

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (Third edition). SAGE.

Isaias, P., Sampson, D. G., & Ifenthaler, D. (Eds.). (2020). *Online Teaching and Learning in Higher Education*. Springer International Publishing. https://doi.org/10.1007/978-3-030-48190-2

Li, J. (2021). University Students' Home-based Learning Engagement in the Synchronous Online Learning Course: The Perspective of Educational Ecology. *International Journal on Innovations in Online Education*, *5*(2). https://doi.org/10.1615/IntJInnovOnlineEdu.2021038947

Liyanagunawardena, T. (2015). Massive Open Online Courses. *Humanities*, *4*(1), 35–41. https://doi.org/10.3390/h4010035

Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distributed Learning*, *14*(3), 202–227.

Mahat, D. (2021). Students' Perception towards Online-Class during COVID-19 Pandemic. *International Research Journal of MMC*, *2*(1), 29–40. https://doi.org/10.3126/irjmmc.v2i1.35127

Mahmod, M. A., Ali, A. M., & Shah, A. (2018). Massive Open Online Courses as an Augmentation of E-Learning: A Review. *International Journal on Perceptive and Cognitive Computing*, *4*. https://doi.org/10.31436/ijpcc.v4i2.69

Moloney, J., & Oakley, B. (2010). Scaling online education: Increasing access to higher education. *Online Learning*, *14*, 55–70. https://doi.org/10.24059/olj.v14i1.1639

Pallant, J. (2020). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS* (7th ed.). Routledge. https://doi.org/10.4324/9781003117452

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, *55*(4), 1721–1731. https://doi.org/10.1016/j.compedu.2010.07.017

Thorne, K. (2004). *Blended learning: How to integrate online & traditional learning* (Repr). Kogan Page.

Wu, H., & Gao, H. (2018). Chances and Challenges: How to Make a Successful MOOC. In G. Sun & S. Liu (Eds.), *Advanced Hybrid Information Processing* (pp. 250–256). Springer International Publishing. https://doi.org/10.1007/978-3-319-73317-3_30

Wang, A. Y., & Newlin, M. H. (2001). Online Lectures: Benefits for the Virtual Classroom. *T H E Journal* [Technological Horizons In Education], *29*(1), 17.

Weller, M. (2003). *Delivering learning on the Net: The why, what & how of online education*. RoutledgeFalmer.

Appendix A: Survey Instrument - Student Data Collection

Section 1: Demographic and general information

#	Question	Options
1.1	Gender	1 => Male 2 => Female
1.2	Age group	1 => 25 year of less 2 => 26 – 35 years 3 => 36 – 45 years 4 => 46 – 55 years 5 => Above 55 years
1.3	Marital status	1 => Single 2 => Married 3 => Divorced 4 => Widow / Widower
1.4	Your highest level of academic qualification	1 => Certificate or diploma 2 => Degree 3 => M.Sc. 4 => Ph.D 5 => Other: _____
1.5	Stream of study	1 => MBA Finance 2 => MBA Management
1.6	Do you have prior experience participating in online education before CoBE?	1 => No 2 => Yes

Section 2: Course Attendance Location, Devices, and Internet Connection

#	Question	Options
2.1	Number of online courses taken at CoBE?	1 => 1 course 2 => 2-3 courses 3 => 4 or more courses
2.2	Your location of attendance during most of the online classes?	1 => Home 2 => Office 3 => Library 4 => Other: _____
2.3	What form of Internet connection did you use for the online courses?	1 => WiFi 2 => Mobile data 3 => Other: ____
2.4	What electronic devices did you use most to attend the online classes?	1 => Desktop computer 2 => Laptop computer 3 => Tablet 4 => Smartphone 5 => Other: _____
2.5	Which online learning/meeting platform have you used for the online classes?	1 => Google Classroom / Meetings 2 => Zoom 3 => Other: ____
2.6	Did you receive training on how to use the platforms to attend online classes?	1 => No 2 => Yes
2.7	Attendance regularity	1 => Skipped most classes 2 => Attended most classes 3 => Attended all or almost all classes

Section 3: Course Engagement, Environment and Perceived Learning Outcomes

#	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
3.1	During the online classes, I had a quiet and conducive environment where I can attend the online classes without interruptions and disruptions.	1	2	3	4	5
3.2	I found the online lectures engaging and have actively participated in discussions during the lectures.	1	2	3	4	5
3.3	I felt comfortable asking questions and sharing my thoughts online.	1	2	3	4	5
3.4	The online lecture format encourages me to engage more and participate in the learning process than the traditional face-to-face classes.	1	2	3	4	5
3.5	The traditional face-to-face lecture format encourages me to engage and participate in the process more than online lecture format.	1	2	3	4	5
3.6	I believe the online lectures provided opportunities for	1	2	3	4	5

	collaboration and learning from peers.					
3.7	I believe the online lecture format creates a barrier/difficulty of communication between students and instructors.	1	2	3	4	5
3.8	I feel comfortable interacting and working with classmates in the online setting.	1	2	3	4	5
3.9	I feel a sense of connection and interaction with the instructors during online lectures.	1	2	3	4	5
3.10	The instructors were readily available to answer questions and address student concerns in the online classes.	1	2	3	4	5
3.11	I understood the material presented in the online lectures well.	1	2	3	4	5
3.12	The online lectures have effectively prepared me for the exams and assignments given in the course.	1	2	3	4	5
3.13	I found it challenging to grasp essential concepts due to the online format/mode of the lectures in the courses.	1	2	3	4	5
314	If recorded lecture sessions will be available after the class, I					

	am less likely to attend the class online.					
3.15	If recorded lecture sessions will NOT be available after the class, I am more likely to attend the online class.					
3.16	I usually follow the recorded session instead of attending the online class					

Section 4: CoI Teaching Presence

#	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
4.1	The instructors communicated the important course topics clearly.	1	2	3	4	5
4.2	The instructors communicated important course goals.	1	2	3	4	5
4.3	The instructors provided clear instructions encouraging participation in course learning activities.	1	2	3	4	5
4.4	The instructors communicated important due dates/time frames for learning activities.	1	2	3	4	5
4.5	The instructors were helpful in identifying areas of agreement and disagreement on course topics, which helped me learn.	1	2	3	4	5
4.6	The instructors were helpful in guiding the class toward understanding course topics in a way that helped me clarify my thinking.	1	2	3	4	5
4.7	The instructors helped to keep course participants engaged and participating in productive discussions.	1	2	3	4	5

4.8	The instructor helped keep the course participants on task in a way that helped me to learn.	1	2	3	4	5
4.9	The instructors encouraged course participants to explore new concepts in this course.	1	2	3	4	5
4.10	Instructors' actions reinforced the development of a sense of community among course participants.	1	2	3	4	5
4.11	The instructors helped to focus the discussion on relevant issues in a way that helped me to learn.	1	2	3	4	5
4.12	The instructors provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	1	2	3	4	5
4.13	The instructors provided feedback in a timely fashion.	1	2	3	4	5

Section 5: CoI Social Presence

#	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
5.1	I was able to get to know other course participants, which gave me a sense of belonging to the course.	1	2	3	4	5
5.2	I was able to form distinct impressions of some course participants.	1	2	3	4	5
5.3	I believe online or web-based communication is an excellent medium for social interaction.	1	2	3	4	5
5.4	I felt comfortable conversing through the online medium.	1	2	3	4	5
5.5	I felt comfortable participating in the course discussions.	1	2	3	4	5
5.6	I felt comfortable interacting with other course participants	1	2	3	4	5
5.7	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	1	2	3	4	5
5.8	I felt that my point of view was acknowledged by other course participants.	1	2	3	4	5

5.9	Online discussions help me to develop a sense of collaboration.	1	2	3	4	5

Section 6: CoI Cognitive Presence

#	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
6.1	Problems posed in the classes have increased my interest in the course topics.	1	2	3	4	5
6.2	Course activities have ignited my curiosity.	1	2	3	4	5
6.3	I felt motivated to explore content-related questions.	1	2	3	4	5
6.4	I utilized a variety of information sources to explore problems posed in the online courses.	1	2	3	4	5
6.5	During the online classes, brainstorming with the students and finding relevant information helped me resolve content-related questions.	1	2	3	4	5
6.6	Online discussions were valuable in helping me appreciate different perspectives from the students.	1	2	3	4	5
6.7	Combining new information helped me answer questions raised in course activities.	1	2	3	4	5

6.8	Online learning activities helped me construct explanations/solutions.	1	2	3	4	5
6.9	Reflection on course content and discussions helped me understand fundamental concepts in the classes.	1	2	3	4	5
6.10	I can describe ways to test and apply the knowledge acquired in the online courses.	1	2	3	4	5
6.11	I have developed solutions to course problems that can be applied in practice.	1	2	3	4	5
6.12	I can apply the knowledge created in the online courses to my work or other non-class-related activities.	1	2	3	4	5

Section 7: Accessibility and Convenience, and Technical Challenges

#	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
7.1	I was able to attend the online lectures easily without much difficulty.	1	2	3	4	5
7.2	The live online format was flexible and has accommodated my schedule well.	1	2	3	4	5
7.3	Attending online lectures was convenient and has supported my work-life balance.	1	2	3	4	5
7.4	I find it convenient to learn from home without the need to travel to the college.	1	2	3	4	5
7.5	It was difficult for me to attend the online lectures regularly.	1	2	3	4	5
7.6	Technical difficulties frequently disrupted my learning experience during online lectures.	1	2	3	4	5
7.7	Technical problems significantly impacted the quality of the live online lectures.	1	2	3	4	5
7.8	What technical issues did you encounter during the online classes (select all that apply)?	1 => Internet connection 2 => Computer related problems 3 => Electricity service outages				
7.9	Please list other major technical difficulties you encountered	Open ended: _____				

	during the online lectures other than those listed in 7.8 above?	

Section 8: Overall satisfaction

#	Question	Options
8.1	Overall, how do you rate the online courses' effectiveness based on your experience?	1 => Very poor 2 => Poor 3 => Neutral 4 => Good 5 => Very good
8.2	Would you choose to take online courses in the future?	1 => No 2 => Yes
8.3	If you have responded 'No' to the above question, can you please indicate the primary reason?	Open ended: _____
8.4	What do you think are the greatest benefits of online classes?	Open ended: _____
8.5	Based on your experience, what do you think are online classes' greatest challenges or difficulties?	Open ended: _____

Appendix B: Survey Instrument - Instructor Data Collection

Section 1: Demographic data

#	Question	Options
1.1	Gender	1 => Male 2 => Female
1.2	Age group	1 => 25 year of less 2 => 26 – 35 years 3 => 36 – 45 years 4 => 46 – 55 years 5 => Above 55 years
1.3	Your highest level of academic qualification	1 => M.Sc. 2 => Ph.D
1.4	How many years of overall (online/face-to-face) teaching experience do you have?	1 => 2 year or less 2 => 3 - 5 years 3 => 6 – 10 years 4 => 11 – 15 years 5 => 16 - 20 years 6 => above 20 years
1.5	Number of online courses taught	1 => 1 course 2 => 2 – 3 courses 3 => 4 or more courses
1.6	Have you received training from the institution on how to use the online teaching/meeting tool	1 => No 2 => Yes

Section 2: Technology and location of online course delivery

#	Question	Options
2.1	From which locations have you primarily taught online classes? (Please select all that apply)	1 => Home 2 => Office (AAU) 3 => Office (Other) 4 => Other: _____
2.2	What type of internet connection did you primarily use for conducting online courses?	1 => WiFi 2 => Mobile data 3 => Other: _____
2.3	What electronic devices did you use to deliver the online classes? (Please select all that apply)	1 => Desktop computer 2 => Laptop computer 3 => Tablet 4 => Smartphone 5 => Other: _____
2.4	Which online learning or meeting platforms have you used for conducting online classes? (Please select all that apply)	1 => Google classroom/meetings 2 => Zoom 3 => Microsoft Teams 4 => Other: _____

Section 3: Accessibility and convenience

#	Question	Options
3.1	How would you rate the ease of accessing and setting up live online lecture platforms compared to traditional face-to-face classroom setups?	1 => Much more difficult 2 => More difficult 3 => About the same 4 => Easier 5 => Much easier
3.2	How flexible do you find scheduling live online lectures compared to face-to-face classes?	1 => Much more flexible 2 => More flexible 3 => About the same 4 => More flexible 5 => Much more flexible
3.3	How convenient do you find the ability to conduct live online lectures from any location compared to being restricted to a physical classroom?	1 => Much less convenient 2 => Less convenient 3 => About the same 4 => More convenient 5 => Much more convenient
3.4	How do you perceive your ability to manage your time when preparing for and conducting live online lectures compared to face-to-face classes?	1 => Much more difficult 2 => More difficult 3 => About the same 4 => Easier 5 => Much easier
3.5	How would you rate the accessibility of teaching resources and materials (e.g., digital content, multimedia, digital whiteboard, etc) during live online lectures compared to face-to-face classes?	1 => Much less accessible 2 => Less accessible 3 => About the same 4 => More accessible 5 => Much more accessible
3.6	Do you have any additional comments or observations regarding the accessibility and convenience of live online teaching? (Optional)	Open ended: _____

Section 4: Student Engagement and Interaction in Online Classes

#	Question	Options
4.1	How do you perceive the level of student participation during live online lectures compared to face-to-face classes?	1 => Much less participation 2 => Less participation 3 => About the same 4 => More participation 5 => Much more participation
4.2	How would you rate the quality of interactions (e.g., discussions, Q&A sessions) between you and your students in live online lectures compared to face-to-face classes?	1 => Much lower quality 2 => Lower quality 3 => About the same 4 => Higher quality 5 => Much higher quality
4.3	How engaged do you feel students are with the course material during live online lectures compared to face-to-face classes?	1 => Much less engaged 2 => Less engaged 3 => About the same 4 => More engaged 5 => Much more engaged
4.4	How do you perceive the ease and frequency of interaction between you and your students during live online lectures compared to face-to-face classes?	1 => Much less interaction 2 => Less interaction 3 => About the same 4 => More interaction 5 => Much more interaction
4.5	How effective do you find student-to-student interactions (e.g., group work, peer discussions) in live online lectures compared to face-to-face classes?	1 => Much less effective 2 => Less effective 3 => About the same 4 => More effective 5 => Much more effective

4.6	How clear and understandable do you find your communication with students during live online lectures compared to face-to-face classes?	1 => Much less clear 2 => Less clear 3 => About the same 4 => More clear 5 => Much more clear
4.7	In your experience, how do the learning outcomes of students in live online lectures compare to those in face-to-face classes?	1 => Much worse 2 => Worse 3 => About the same 4 => Better 5 => Much better
4.8	Do you have any additional comments or observations regarding student engagement and interaction within the live online learning environment? (Optional)	Open ended: _____

Section 5: Your level of satisfaction with the various aspects of interactions during the online lectures as compared to the face-to-face classes

#	Question	Very dissatisfied (1)	Dissatisfied (2)	Neutral (3)	Agree (4)	Very satisfied (5)
5.1	How satisfied are you with the level of student participation during live online lectures compared to face-to-face classes?	1	2	3	4	5
5.2	How satisfied are you with the quality of interactions (e.g., discussions, Q&A sessions) between you and your students in live online lectures compared to face-to-face classes?	1	2	3	4	5
5.3	How satisfied are you with the level of student engagement with the course material during live online lectures compared to face-to-face classes?	1	2	3	4	5
5.4	How satisfied are you with the ease and frequency of interaction between you and your students during live online lectures compared to face-to-face classes?	1	2	3	4	5
5.5	How satisfied are you with the effectiveness of	1	2	3	4	5

	student-to-student interactions (e.g., group work, peer discussions) in live online lectures compared to face-to-face classes?					
5.6	How satisfied are you with the clarity and understandability of your communication with students during live online lectures compared to face-to-face classes?	1	2	3	4	5
5.7	Do you have any additional comments or observations regarding your level of satisfaction with various aspects of interaction during online lectures compared to face-to-face classes? (Optional)	Open ended: _____				

Section 6: Technical Issues

#	Question	Options
6.1	What technical issues did you encounter during online teaching sessions? (Please select all that apply)	1 => Internet connectivity problems 2 => Platform crashes or outages 3 => Electricity service outages 4 => Audio issues 5 => Video issues 6 => Difficulty sharing screen 7 => Hardware issues 8 => Lack of technical support 9 => Other: _____
6.2	How frequently did you experience internet connectivity problems during live online lectures?	1 => Very frequently 2 => Frequently 3 => Occasionally 4 => Rarely 5 => Never
6.3	How reliable was the online lecture platform (e.g., Google Meetings, Zoom, Microsoft Teams) in terms of performance and stability?	1 => Very unreliable 2 => Unreliable 3 => Neutral 4 => Reliable 5 => Very reliable
6.4	How satisfied were you with the availability and responsiveness of technical support for resolving issues during live online lectures?	1 => Very dissatisfied 2 => Dissatisfied 3 => Neutral 4 => Satisfied 5 => Very satisfied
6.5	How would you rate the quality of audio and video during live online lectures compared to face-to-face classes?	1 => Very poor 2 => Poor 3 => Average

		4 => Good 5 => Excellent
6.6	How easy was it for you to use the technology required for live online lectures (e.g., software, hardware, online tools)?	1 => Very difficult 2 => Difficult 3 => Neutral 4 => Easy 5 => Very easy
6.7	Do you have any additional comments or observations regarding the technical issues you encountered during live online lectures? (Optional)	Open ended: _____

Section 7: Overall Satisfaction

#	Question	Options
7.1	How satisfied are you with your overall experience of conducting live online classes compared to traditional face-to-face classes?	1 => Very dissatisfied 2 => Dissatisfied 3 => Neutral 4 => Satisfied 5 => Very satisfied
7.2	How likely are you to choose to conduct live online lectures in the future, given your past experiences?	1 => Very unlikely 2 => Unlikely 3 => Neutral 4 => Likely 5 => Very unlikely
7.3	If you have responded 'Unlikely' or 'Very unlikely' to the above question, can you please indicate the primary reason? (Optional)	Open ended: _____
7.4	Beyond facilitating the continuation of teaching and learning from remote locations, what do you believe are other significant advantages of online teaching? (Optional)	Open ended: _____
7.5	Based on your experience with past online classes, what do you consider to be the major challenges that hinder this mode of teaching? (Optional)	Open ended: _____
7.6	Do you have any additional comments or observations regarding your overall satisfaction with live online classes? Please share any thoughts, experiences, or suggestions that you believe are relevant. (Optional)	Open ended: _____

Appendix C: Pilot Data Reliability Test Results

Table 17: Pilot test - reliability test results for teaching presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Design & Organization	TP_DesgnO1	0.832	0.899
	TP_DesgnO2		
	TP_DesgnO3		
	TP_DesgnO4		
Facilitation	TP_Facil1	0.816	
	TP_Facil2		
	TP_Facil3		
	TP_Facil4		
	TP_Facil5		
	TP_Facil6		
Direct Instruction	TP_DI1	0.663	
	TP_DI2		
	TP_DI3		

Table 18: Pilot test - reliability test results for social presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Affective Expression	SP_AfEx1	0.736	0.917
	SP_AfEx2		
	SP_AfEx3		
Open Communication	SP_OC1	0.823	
	SP_OC2		
	SP_OC3		
Group Cohesion	SP_GrpC1	0.908	
	SP_GrpC2		

	SP_GrpC3		

Table 19: Pilot test - reliability test results for cognitive presence and sub-elements.

Sub element	Items	Cronbach's Alpha	Construct Cronbach's Alpha
Target Event	CP_TrEv1	0.794	0.897
	CP_TrEv2		
	CP_TrEv3		
Exploration	CP_Explr1	0.724	
	CP_Explr2		
	CP_Explr3		
Integration	CP_Intgr1	0.694	
	CP_Intgr2		
	CP_Intgr3		
Resolution	CP_Reso1	0.873	
	CP_Reso2		
	CP_Reso3		