

# Lecturers' Acceptance of, Perceived Challenges and Prospects of Online Co-Teaching at a University of Technology

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**Abstract**— *The paper discusses lecturers' acceptance of, perceived challenges, and prospects of online co-teaching in a teacher education programme of a South African university of technology. Many higher education institutions have added digital features to support active learning and, thus, seek creative technology-based teaching strategies to develop students' learning. However, the challenge is that lecturers are faced with difficulties in adopting technology for online co-teaching. The article is shaped by the technology acceptance model as the principal lens underpinning the study. This is a qualitative paper that responded to two questions: What are the lecturers' acceptance of and perceived challenges of online co-teaching strategies in large classes and how can online co-teaching in large classes be implemented effectively and what are its prospects? The analysis found that online co-teaching is perceived to be user friendly and easy to use for teaching large classes and has good prospects and the potential to solve the issues related to large classes. However, lecturers do experience challenges, such as low student engagement, the need to adapt online co-teaching methods, lack of co-planning and effective collaboration and technical problems. In light of the findings, the study suggests that lecturers are equipped with knowledge and skills for engaging students in large online collaborative classes. Enhancing online collaboration strategies and the matter of computer anxiety are factors that should be taken into consideration.*

**Index Terms**— *Online co-teaching, technology acceptance model (TAM), challenges, lecturers.*

## I. INTRODUCTION

Technology-enhanced teaching and learning strategies have gained popularity in higher education over the past decade [1]. Therefore, higher education institutions that have incorporated digital technologies to encourage active learning are looking for innovative technology-based teaching techniques to develop student learning [2,3]. The goal of incorporating technology into the teaching and learning process is to increase productivity, improve the effectiveness of present methods, and implement pedagogical innovations that will benefit education [2,4]. By adopting digital tools, technology could contribute significantly to the education realm and enable students and lecturers to engage in work more successfully [2]. Therefore, lecturers are being challenged to abandon old lecture formats to meet new student expectations and embrace digital delivery platforms and inclusive, evidence-based classroom practices [5]. Lecture rooms are the most crucial education venues for digital technology integration, and this may also apply to online co-teaching classrooms [4]. Hence, the use of digital technology in learning environments is significantly influenced by the perceptions of lecturers regarding its acceptance [6]. However, online co-teaching may face difficulties that may hinder its effective implementation. This paper discusses lecturers' acceptance of, perception of challenges facing and prospects for online co-teaching in the teacher education programme of a South African university of technology. The paper commences by reporting on studies

on acceptance of and challenges facing online co-teaching, discussing a theoretical framework, research methodology and the study's findings. This discussion will be used to draw conclusions and make recommendations for further research.

## II. ACCEPTANCE OF AND CHALLENGES FACING ONLINE CO-TEACHING

Several studies explored the acceptance of and challenges facing digital technology of online co-teaching [7-9]. Reference [9] conducted a case study to investigate the implementation of the co-teaching model for inclusive classrooms in a virtual public school. The study highlights the importance of preplanning and ongoing professional development, ensuring universal benefits for all students in the least restrictive environment possible, and redefining general education teachers' roles to ensure effective collaboration. The findings indicate crucial nuances and obstacles that are present when co-teaching is applied in the virtual academy's online context. Effective planning and ongoing professional development emerged as critical components of successful co-teaching.

To contribute to online teaching, Reference [7] conducted a qualitative study to examine the experiences of university lecturers and students of online learning in an environment characterised by Covid-19. Their findings reveal that lecturers and students were both afraid of using new technologies and modes of instruction. The authors' recommendation is that, while online learning is a promising technique for transitioning from traditional education to

modern learning, it cannot be sustained in areas where technology infrastructure is weak. Moreover, Reference [10], in their study in Indonesia to investigate lecturers' perspectives on online learning, contend that efforts are needed to improve infrastructure facilities, and for training to support online learning. They conclude that online learning has prospects and potential. Though the study did not focus on online co-teaching, the finding indicates that lecturers and students experience intrinsic and extrinsic challenges when they have to deal with online teaching, in spite of the benefits and prospects of online teaching and learning.

Furthermore, a study was undertaken in Indonesia [11] to evaluate the efficacy of online education implementation, as well as to analyse teacher perspectives and the obstacles faced by 50 senior high schools. The study employed both quantitative and qualitative methods, semi structured interviews with teachers focused on the challenges teachers face and measures to address such challenges during online teaching implementation. The results showed that implementing online instruction was difficult. During the adoption of online education, the teachers confronted six major challenges: internet access, students' economy, students' psychology, lack of facilities, time constraints, and the teachers' and students' technology competencies.

Another challenge is lack of knowledge and experience, which is worsened by insufficient resources to facilitate online teaching and learning. Reference [12] explored the emergence of online instruction in the economics and management sciences. The idea is that education stakeholders should invest in building a healthy relationship with the adoption of emergency online teaching to create conducive learning environments in remote settings. Although co-teaching has grown in popularity, it may still be difficult to implement in the classroom because of internal and external obstacles. Nevertheless, it is clear that digital technologies in classrooms offer benefits, as many lecturers embrace their use, though the integration of digital technologies remains a significant challenge.

Since co-teaching involves multiple professionals working together to plan, instruct and assess a diverse group of students, it enhances teaching skills and fosters connections for successful practice [13]. Similarly, using technology in the delivery of lessons helps lecturers with the process of preparing and delivering lessons effectively and building confidence [7]. Therefore, online co-teaching involves two or more professionals working together to plan, instruct and monitor the progress of a heterogenous or blended group of students in and outside the classroom, to achieve learning objectives using technology. Co-teaching encourages radical care by promoting reciprocity in the study of power, privilege and action by providing opportunities for mutual care [13]. Effective co-teaching requires understanding, confidence about implementation, and a positive attitude from lecturers, including those involved in online co-teaching [13].

While the studies mentioned above contribute to this study by emphasising the role of technology in teaching and learning and the challenges it faces, it is evident that most universities have technology-literate lecturers and relevant infrastructure or resources; the challenge is that lecturers use technology for solo lecturing, and information on research into online co-teaching, especially at a university of technology, is lacking. Therefore, the implementation of online co-teaching requires careful consideration of the way online co-planning, co-instruction and co-assessing will be applied by lecturers. Concerning this issue, the current study was conducted at a South African university of technology to examine technology in and prospects of online co-teaching strategy in large classes and how online co-teaching can be implemented effectively. While the lecturers were accustomed to digital online teaching in solo sessions, their expertise in collaborative teaching, such as co-planning, co-instruction, and co-assessment, was limited. They were challenged by a shortage of online co-teaching pedagogical expertise.

### III. THEORETICAL FRAMEWORK

The technology acceptance model developed by [14] was used as a theoretical framework for this paper. The model identifies three elements that influence user motivation: perceived ease of use, perceived utility and attitude toward use [15]. Perceived usefulness refers to a person's belief that using a tool will improve their job performance, whereas perceived ease of use refers to how easy it is to use [15]. According to a study by [16], social and cognitive processes, such as social acceptability, system affiliation and voluntary engagement, all have substantial effects on user acceptance intentions. Reference [17] used the technology acceptance model to investigate factors that influence adaptation by higher education teachers; these authors incorporated system quality, perceived self-efficacy and facilitating conditions. The results indicate that both system quality and perceived self-efficacy strongly influenced and, in turn, indirectly affected attitudes towards technology use. The argument is that facilitating conditions affected neither perceived ease of use, nor attitudes.

According to technology acceptance model, perceived usefulness and perceived ease of use are the key predictors of someone's intention to utilise a technology, which then predicts actual usage behaviour. Hence, the paper aims to assess lecturers' acceptance of and perceived challenges of online co-teaching in large classes, as per the technology acceptance model, and to understand how to effectively implement online co-teaching by focusing on enhancing its implementation and addressing potential hurdles.

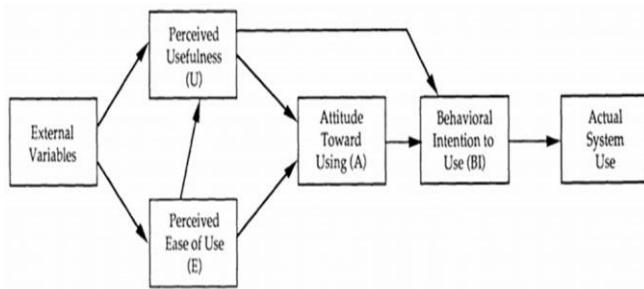


Figure 1: Technology acceptance model [18]

#### IV. RESEARCH METHODOLOGY

The study is based on the transformational paradigm, which allows the researcher to customise the argument for reforming university classrooms to understand the problems better and effectively implement collaborative online lessons. This qualitative study used semistructured interviews to gather data. Purposive sampling was used, according to which the researcher identified competent lecturers who could contribute to the study of the topic under consideration [12]. The participants were six lecturers of the Faculty of Humanities at the university of technology who were involved in the online co-teaching of compulsory Educational Foundations modules. Participants answered two questions: What are the lecturers' acceptance and perceived challenges of online co-teaching strategy in large classes, and how can online co-teaching be effectively implemented? Participation was voluntary, and lecturers gave consent after being informed of the study goals and benefits. Semistructured interviews were carried out with each participant, either remotely or in person. Semi-structured interviews were recorded, transcribed and thematically analysed. Data were thematically organised into categories to generate explanations that reflect lecturers' acceptance of, the problems they perceived, and prospects for online co-teaching in a teacher education programme at a South African university of technology.

#### V. FINDINGS AND DISCUSSION

The study's findings regarding lecturers' acceptance of, perceived challenges and prospects of online co-teaching large classes in teacher education at a university of technology are discussed below. Digital learning platforms have altered the way collaborative lecturers connect with, plan, present and assess students in big co-taught classes. The qualitative data collection was directed by the following study objectives:

- 1) To identify the lecturers' acceptance of, perception of challenges facing online co-teaching strategies in large classes.
- 2) To determine prospects for online co-teaching in the teacher education programme of a South African university of technology.

Themes that emerged from the data are explored below.

##### A. Acceptance of Online Co-teaching

The participants indicated that it was easy to adopt technology and they demonstrated a willingness to participate in co-teaching large classes online. The co-teaching lecturers agreed that their university adequately prepared them for online teaching and provided the tools they needed. A lecturer shared this thought:

*Online co-teaching made life easier for co-teaching large classes. I felt the support of my colleagues when presenting to a large class and sharing with my colleagues. I was first wary of co-teaching online, believing that my colleagues would be critical to my delivery of the lesson, but as the class progressed, it became easier, and I felt more comfortable.*

Other participants mentioned that they found online teaching easy to use and teaching is effective and efficient. The participants shared their experiences of online co-teaching:

*Lecturer 1: The tools on Blackboard made it easy for me to present the lesson and share the content I had prepared for a PowerPoint presentation. It was also helpful in assessing the students.*

*Lecturer 2: I've been teaching for over 20 years in face-to-face classrooms, so teaching together online makes it easy for me to educate big groups of students, making it a valuable tool.*

*Lecturer 3: The technology provided flexibility and simplicity in delivering the lesson. And content created for those classes was always smoothly transfer over to mobile devices and other devices.*

*Lecturer 4: It was not an effort on my side as the students had knowledge on how to use technology and thus made it easier for them to join. I didn't have to train them.*

*Lecturer 5: I felt comfortable presenting my part of content and even when my colleague presented her part it went smoothly, and we were able to collaborate.*

*Lecturer 6: I have control over how the online classes were implemented and it is a relevant platform to teach large groups of students and it is user friendly.*

The primary challenge that new technology designers face is technological acceptability [6]. However, this was not the case for instructors at the university of technology who implemented collaborative online classes. Research shows that technologies serve both students and lecturers, but lecturers must accept and actively participate in the creation and integration of educational technology in co-teaching [19]. The acceptance use of technology in co-teaching has impact in attitude and belief and build confidence in technology [19].

**B. Perceived Challenges of Online Co-Teaching**

Adapting to online co-teaching has been a challenge for various reasons. The participants voiced the following challenges discussed in the following below.

*Lecturer 4: It was the first time being involved in online co-teaching and thus seemed difficult because the collaborative team didn't know how to go about sharing the delivery of online lessons.*

*Lecturer 5: In other instances, the co-lecturer did everything alone without involving other lecturers.*

*Lecturer 1: The challenge was not planned thoroughly; we discussed the topics but we didn't plan on how to deliver the lessons. This made me anxious.*

*Lecturer 2: Co-teaching became stressful due to a lack of communication.*

*Lecturer 3: I somehow felt uneasy to teach using technology in front of my colleagues, I would say fearful.*

These comments show that online co-teaching should be carefully planned, and each lecturer should know exactly what their roles will be in presenting lessons collaboratively online. Reference [20] asserts that co-teaching roles often lack proper information on preparation and knowledge of strategies, leading to inconsistent collaboration in planning, instructing and assessing in co-taught lessons. The goal of student learning is a complex and challenging matter; hence lecturers must design the course or subjects and implement methods for student engagement, even when teaching collaboratively online [13].

The other challenge was technical glitches. A widespread issue of technology is the digital divide, or unequal access and internet connectivity [21]. This was evident in the participants' narrations:

*Lecturer 6: Most of the students were struggling to join online sessions, and this was due to lack of facilities or technical devices. Again, data and internet connectivity have always been a challenge.*

*Lecturer 1: Connection was weak due to a large volume of students that were connecting at a particular time.*

*Lecturer 3: Some of the students would leave the session during the presentation, others would forget and other will join the session late.*

Environmental and individual constraints are important obstacles for the successful implementation of co-teaching [22]. These findings indicate that the frustration experienced because of technology issues also speaks to institutional responsibility. Reference [23] underlines the need for institutions to participate completely in and actively support the co-teaching process, to ensure its effectiveness. Students also need to be provided with a good learning experience and must also be trained on online co-teaching.

Another challenge the lecturers experienced was engaging students in a social learning environment by providing

opportunities to interact with peers and the lecturers. The comments that emerged indicate that students did not participate, that they were quiet, and that some of them quit before a lesson was finished. This behaviour was evident from the participants' responses:

*Lecturer 2: Majority of the students didn't respond to my questions, only a handful nor they didn't want to take part in discussions. It was frustrating to not get responses from students.*

*Lecturer 4: The students claimed that it was difficult to find a quiet and private environment to be fully engaged with lectures. Again, some students struggle to focus in online classes because of a lack of face-to-face connection.*

Student engagement has been found to be a foundational construct for the perceived effectiveness of a technological tool used in co-teaching [13]. Reference [24] believes that engagement begins with motivation and active learning in the classroom. It can be frustrating for lecturers if students do not fully participate in collaborative online lessons. Hence, it is important to develop learning activities in which students will participate and engage in authentic learning [25].

**C. Adoption and Prospects of Online Co-Teaching**

Online co-teaching can enable universities to reduce the physical footprint of their buildings and provide flexible areas for students to learn collaboratively. This notion is in line with [26], who explains that using digital technology in online co-teaching can help match existing curricula, while also giving lecturers with a mechanism to guarantee that learning opportunities are created [26]. This claim was evident in the participants' narrations:

*Lecturer 5: Online co-teaching is able to meet the needs of different class sizes, making it easier to use interventions or support large groups of students. It allows increased access even for students who live far away from campus.*

*Lecturer 1: Students may attend class wherever they are. Furthermore, online co-teaching allows students to benefit from many educators with various expertise, resulting in diverse learning experience when teaching large groups.*

Some of the university venues could not accommodate classes of more than 200 students, therefore, online co-teaching enabled all students to attend the online session without fear of being denied a seat. Every student was accommodated and included. A lecturer said that she no longer worried whether the chairs would be enough for all the students. She said:

*When conducting face-to-face classes, the number of chairs available in the classroom was a problem because we had many students. However, while teaching collaboratively online, one does not need to worry about such resources and can instead focus on material delivery, so I believe online co-teaching will be useful in the future for dealing with complex situations.*

Further probing found that lecturers view the future of online co-teaching to lie in the way it can reduce the challenges caused by large classes.

Another solution is to engage students in online co-teaching to build meaningful teaching and learning activities. Effective online collaborative teaching requires lecturers to be properly trained to plan lessons and be equipped with skills. The lecturers argued as follows:

*Lecturer 6: Proper planning and preparedness is required on the side of the lecturer. I still need to go for training and gain knowledge on how to co-teach online.*

*Lecturer 2: We should plan to use active teaching and learning methods to engage students in class, thus online co-teaching will be effective.*

It is evident that, for lecturers to effectively adopt online co-teaching, they must be trained in four phases of co-teaching: planning, implementing, assessing instruction, and reflecting on its impact on student learning. The utilisation of active teaching approaches, combined with co-teaching instructional activity, may be beneficial and foster participation. Reference [27] asserts that collaboration necessitates lecturers to have soft skills and complementary expertise. Meeting these requirements will assist lecturers to learn, reflect, modify and provide students with effective educational approaches and align views, values and teaching when dealing with large classes [28,29]. Lecturers' perceptions of their own willingness to deal with digital technology are related to the use of technology in learning environments.

## VI. CONCLUSIONS AND SUGGESTIONS

Online co-teaching has the potential to transform the future of education. A successful online co-teaching experience requires social acceptability, system affiliation and support, and voluntary engagement, which affect user acceptance intentions and motivation. In conclusion, this study provides valuable insights into lecturers' acceptance of, perceived challenges and prospects of online co-teaching at a teacher education programme of a South African university of technology. The findings of this study highlight that co-teaching lecturers conceded that online learning was efficient and effective, and the tools used at the university of technology were user friendly and easy to use, nonetheless, online co-teaching may confront problems.

Regarding the perceived challenges of online co-teaching, significant issues – intrinsic and extrinsic obstacles – must be confronted. Online co-teaching faces challenges such as inconsistent internet connection, limited data provision, unsuitable study environments, and inadequate planning between lecturers to effectively engage students. Lecturers need to be equipped with knowledge and skills to construct active learning activities for online co-teaching to help students to participate and engage. Therefore, the recommendation is that successful online co-teaching relies

on the positive attitudes of co-teachers, which are influenced by preparedness, acceptance and the perceived ease of use of the collaboration tool. Thus, online co-teaching may be an effective teaching method for solving issues that characterise large classes; therefore, effective co-teaching requires that institutions are fully involved and play an active part in the process by providing administrative support.

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