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Pedagogical training and support requirements for effective facilitation of online course instructors

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Abstract

The Fourth Industrial Revolution (4IR), coupled with the COVID-19 pandemic and the resultant restrictions on social gatherings, saw many institutions of higher education transition from traditional face-to-face to online instruction. The transition was forced in response to a pandemic, and there were and still are numerous teething problems with effective online facilitation of learning. This desktop review paper discusses the pedagogical support requirements for course instructors for effective online learning facilitation. The findings of the study reveal that online teaching differs from traditional face-to-face learning due to geographical and physical distances. Instructors must understand and equip themselves with necessary knowledge and skills for effective online delivery. The discussion is premised on the view that effective online facilitation of learning should be based on sound pedagogical principles that bring to the fore the interplay between technology, content and pedagogy. The paper recommends deliberate and sustained training opportunities for online course instructors in all facets of online teaching and learning.

Keywords: *online teaching, facilitation of learning, university lecturers, lecturer support*

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1. Introduction

Contemporary higher education institutions are attempting to restructure their instructional pedagogies by implementing change management, extending current methods to fourth industrial revolution (4IR), and addressing the unique technological requirements of each institution (Chigbu et al., 2023). Higher education institutions in Southern Africa have yet to adopt the 4IR systematically (Aigbavboa et al., 2023). Despite the wealth of literature on the potential benefits of technology to learners' growth, there is a dearth of information regarding the barriers preventing the higher education sector from implementing the 4IR to support teaching and learning (Lubinga et al., 2023). The best universities in Southern Africa have incorporated the 4IR to some level. As a result of the Fourth Industrial Revolution (4IR) trend, higher education institutions are implementing increased data volumes, cutting-edge algorithms, artificial intelligence (AI), automation, and robotics to improve the quality of their services (Rouhiainen, 2019). Due to the increased demand for high-quality services, universities worldwide have increased their use of robotic process automation, allowing them to develop more sophisticated, cutting-edge administrative operations for financial reporting, payroll, module delivery, and admissions (Lubinga et al., 2023).

Global higher education was significantly impacted by the COVID-19 epidemic (Schleicher, 2020; Boudreau, 2020; Armstrong-Mensah et al., 2020; Ukanec & Farnell, 2021). Higher education institutions had to change how instruction was carried out in the academic year 2019–2020–2021, which sped up the online learning and teaching that had been gradually encroaching on the educational system (Ukanec & Farnell, 2021). Students were forced to rely more on their resources to learn remotely over the Internet (Gupta, 2017) to continue their studies during the shutdown, leaving out those who lacked the financial means to buy technology and those who lived in distant places without access to the Internet (Schleicher, 2020).

The traditional method of facilitating learning in a face-to-face setting is different from online facilitation. According to Wu et al. (2016), the online facilitation of learning necessitates that course instructors embrace new and altered roles. As they must comprehend the connections between technology, pedagogy, and content in many fields, course teachers' jobs become more complex (Ramírez-Montoya et al., 2021). According to Jacobson et al. (2017), online learning entails learning through information, communication technology, and the Internet. Learning often occurs on a specially created Learning Management System (LMS),

which utilises internet connectivity. Online course facilitation also involves inspiring, engaging, supporting, and enabling learners' communication and participation throughout the course (Karachristos et al., 2020) and directing and assisting a group during a collaborative activity or discussion in an online setting (Babu & Sridevi, 2018). This can apply to online meetings, webinars, courses, and other digital communication methods, in a welcoming environment where participants may cooperate, share ideas, and learn from one another (Ali, 2020). The crucial tasks of facilitators, such as inspiring, involving, supporting, and facilitating communication and collaboration, are embedded in this perspective on online course facilitation. They may employ various strategies and tools to promote involvement and participation, including chat functions, breakout rooms, and virtual whiteboards. Therefore, the course facilitator should be adequately prepared to undertake the online facilitation roles.

Effective online facilitation necessitates excellent communication abilities, the capacity to control group dynamics, and the ability to balance individual participants' needs and the group's objectives (Zhong & Norton, 2019). A thorough understanding of the platforms and technologies utilised to support online activities is frequently necessary for effective online facilitation (Zhong & Norton, 2018). Given the vital responsibilities performed in online facilitation, training and supporting course instructors for efficient online facilitation. is critical.

The rapid shift from face-to-face to online instruction (Stoian et al., 2022) left many educators unprepared and lacking the skills, knowledge, and support to effectively facilitate online learning (Singh et al. 2022). This lack of technology skills and knowledge may result in lower student engagement and satisfaction (Ikram et al., 2025). Therefore, the aim of this study is to determine the support online course instructors need for efficient online facilitation. In addition, it also explores the challenges online course instructors face in the context of the transition prompted by the COVID-19 pandemic and establishes the essential knowledge, skills, and pedagogical principles necessary for course instructors to effectively facilitate online teaching and learning.

2. Theoretical Framework

A theory is generally described as a set of statements, philosophies, or thoughts that relate to a particular phenomenon (Picciano, 2017). A theory defines, explains, or predicts a subject. The definition of theory also varies depending on the discipline, primarily related to

the term model (Graham et al., 2013). Several theories have emerged for online instruction. This section will examine these regarding their appropriateness for the online environment.

Community of Inquiry (CoI) theory. The community of inquiry theory for online learning environments was suggested by Rawal (2025). This theory is based on the concept of three distinct aspects: cognitive, social, and teaching. In the CoI, a social phenomenon manifests itself through interactions among students and instructors. The CoI has become one of the more popular models for online and blended courses designed to be highly interactive among students and faculty using discussion boards, blogs, wikis, and videoconferencing.

Connectivism. Connectivism is another online teaching and learning theory that George Siemens (2004) advocated. It is an online learning theory that recognises transformations in how knowledge and information flow, grow and change because of massive data communication networks. Internet technology has moved learning from internal, individualistic activities to group, community, and crowd activities. In developing the theory, Siemens (2004) recognised how large-scale networks become indispensable in helping people and organisations manage data and information.

Connectivism is the integration of principles explored by chaos, network, complexity and self-organisation theories where learning is a process that occurs within unformulated environments. It is motivated by the active flow of information. Students need to understand and be provided with experiences in navigating and recognising oceans of constantly shifting and evolving information. It is particularly appropriate for courses with very high enrolments and where the learning goal or objective is to develop and create knowledge rather than to disseminate it.

As a learning theory, connectivism focuses on the value of networked relationships and the application of technology (Siemens, 2004). In contrast to isolated experiences or the passing of knowledge from an expert to a learner, the idea contends that learning takes place through creating and sharing knowledge across networks of people and resources (Picciano, 2017). Social media, online forums, and other digital platforms are encouraged to connect with other learners and subject matter experts and develop personal learning networks. As a result, learners may have access to a network of resources and assistance throughout their educational journey.

Online Collaborative Learning (OCL). OCL is a theory proposed by Harasim (2012) to redesign formal, non-formal, and informal education for the knowledge age. It focuses on

collaborative learning, knowledge development, and Internet use. Students are encouraged to work together to solve problems through discourse in OCL, and the teacher serves as both a facilitator and an active part of the learning community (Picciano, 2017).

The online collaborative learning hypothesis emphasises the relevance of social interaction and collaboration in the online learning process (Langset, et al., 2018). It implies that learning happens because people work together to build knowledge in a supportive and collaborative environment (Harasim, 2012). It promotes group work and the creation of educational activities, including case studies, peer evaluations, and group projects that call for collaboration among students, which aid students in improving their problem-solving, communication, and teamwork abilities (Picciano, 2017). It also emphasises using technology to support cooperation (Harasim, 2012). Technology tools like shared papers, virtual whiteboards, and video conferencing should improve teamwork between and among students. In a virtual setting, such tools can encourage student collaboration and support knowledge construction (Picciano, 2017). Various viewpoints are welcomed during the online learning process, and there should be a setting where students feel comfortable sharing their various views and experiences. This can support critical thinking and broaden students' comprehension of a subject.

Social Constructivism. According to Secore (2017), social constructivism is a learning theory that strongly emphasises the value of social interaction and teamwork in the learning process. The theory contends that knowledge is not passed from an expert to a passive learner but is created through social interactions between people and their environment (Cicconi, 2014). Applying social constructivist theory in online learning entails developing a collaborative and interactive learning environment where students may interact with one another and co-construct knowledge. In utilising group discussions, team projects, and peer review activities, the social constructivist pedagogy promotes collaboration and the design of learning activities that inspire students to work together and engage in collaborative problem-solving (Secore, 2017).

3. Methodology

3.1. Research Design

The study uses post-positivist framework, which according to Devi et al. (2021), is well-suited for examining the intricate dynamics of pedagogical training and support for online

course instructors, facilitating a nuanced comprehension of their views and experiences. The qualitative technique is warranted because of the exploratory character of the research issue (Tracy, 2024). Qualitative research provides profound insights into teachers' subjective experiences, elucidating the complexities of their pedagogical needs and support requirements. Therefore, this method permits adaptability in data acquisition and examination, promoting a comprehensive, contextual comprehension of the phenomenon.

3.2. Document Analysis

The study employed document analysis as a primary method for data collection (Szabó et al., 2025). This involves the systematic examination of various documents related to pedagogical training and support for online course instructors. The documents analyzed included training manuals and guidelines for online instructors, institutional policies on online pedagogy, previous research studies and reports on online teaching practices and feedback and evaluation reports from instructors regarding training programs. This method provided a comprehensive overview of existing frameworks and identified gaps in the current support systems for online course instructors.

3.3. Instrumentation and Data Gathering Process

The data collection methodology encompassed multiple stages outlined in Tisdell et al. (2025), wherein the first stage was source identification, where pertinent documents were located through academic databases, institutional repositories, and professional associations dedicated to online education. In the selection criteria, documents were chosen based on their pertinence to the study subject and the caliber of material presented. A systematic review was then done where each document was meticulously analysed to extract relevant information regarding pedagogical training and support needs. Data was then documented where principal themes and findings were systematically recorded to enable subsequent analysis. This comprehensive method, thus, guaranteed that the collected data was both extensive and pertinent to the study's objectives.

3.4. Data Analysis

The study employed thematic analysis, outlined by Islam and Mahmudulhassan (2025), as an approach that entails discovering and understanding patterns or themes within qualitative

data. Initially, there was data familiarization, where the researcher engaged deeply with the content to achieve a comprehensive comprehension and discern preliminary trends. There was a generation of initial codes where essential information was coded, concentrating on elements pertaining to training and support requirements. Then, there was identification of themes or codes that were categorised into overarching themes that encompassed shared characteristics across the papers. The themes were then evaluated and adjusted to ensure proper representation of the data. Themes were distinctly defined and designated to encapsulate their essence, hence providing clarity in reporting. The final study comprised comprehensive descriptions of each subject, substantiated by evidence from the examined papers. This thorough method facilitated a comprehensive grasp of the pedagogical training and support requirements for online instructors.

3.5. Research Ethics

Ensuring an accurate representation of data obtained from literature is a fundamental component of research ethics (Ali et al., 2025). This study ensured that reliable sources were used, only documents from esteemed sources were included to guarantee the veracity of the content. There was also a cross-verification of data from several papers to ensure uniformity and precision. The technique and criteria for document selection were explicitly delineated, enhancing transparency in the research process. In this study, there was also adherence to copyright where appropriate citations and acknowledgments were given for all examined documents to uphold intellectual property rights. Research ethics were considered to preserve the integrity and validity of its findings, thereby providing significant insights into the pedagogical training and support needs of online course instructors.

4. Findings and Discussion

4.1. Tools that Support Collaboration in Online Learning

In online learning, various technological solutions are available to facilitate collaboration. Online teachers can facilitate real-time communication between students and synchronous conversations and activities by using video conferencing platforms like Zoom, BigblueButton, Microsoft Teams, and Google Meet (Pavle et al., 2020). However, training and supporting online course instructors in effectively using video conferencing platforms is essential. As Bailey et al. (2022) noted, video conferencing platforms like Zoom allow for

multiple ongoing sub-conferences called breakout rooms. In a breakout room, instructors can separate students into partners and groups to engage in real-time group activities. Digital whiteboards are another tool course instructors can use to improve student participation and collaboration (Reguera & López, 2021). Different digital whiteboards, such as Google Jamboard, Padlet, and Miro, let students collaborate and share ideas in a virtual environment. Reguera and Lopez's (2021) survey indicate that using digital whiteboards in online learning enhances student engagement, helps students grasp abstract concepts, and makes learning more dynamic.

To improve online learner engagement and collaboration, online collaborative document editing technologies must be used. Real-time collaboration on documents, spreadsheets, and presentations is possible between students using Google Docs, Microsoft Office 365, and Dropbox Paper, among other collaborative document editors (Costley et al., 2023). As observed by Wichadee and Suwantarathip (2014), the involvement of students in online collaborative writing through Google Docs assists in transitioning learning from a passive activity to active creation by students. Through the Google Docs activities, students share documents online, write together and provide real-time comments to improve the online product (Oxnevad, 2013).

Enhancing online teaching and learning requires the use of online discussion forums. Discussion forums, as noted by Kilinc and Altinpulluk (2021), are tools that help students produce content, collaborate, and engage in synchronous or asynchronous learning in an online setting. According to Loncar et al. (2014), online discussion forums facilitate the expression of viewpoints by less confident learners and provide a space for reflection on individual ideas and peer response, all of which contribute to the learning process. In instances where course instructors utilise synchronous or asynchronous discussion, there is a need to clearly define the purpose of such discussion and express the specific roles of the instructor and students.

Utilising social media sites like Facebook, Twitter, and WhatsApp helps to establish online learning communities where students may communicate, exchange materials, and work together on projects. It has been discovered that integrating social media into virtual learning environments improves student cooperation, communication, and academic achievement (Omar, 2023). According to Akcaoglu and Lee (2018), instructors of online courses must be knowledgeable and skilled enough to include social media in their lesson plans and take advantage of its advantages for learning by understanding both the positive and negative

aspects of social media. The course instructors should be able to address issues like information overload, diversions, and privacy concerns that come with using social media.

There are technological tools available to support collaboration in online learning and these technologies make communication easier, promote involvement, and help students collaborate productively in a virtual setting (Makda, 2025). With these technological tools, students can forge strong connections with other learners, participate in cooperative learning activities, and acquire the competencies required to thrive in the digital age (Rajaram, 2023). Thus, to improve student collaboration and achieve predetermined learning outcomes, course teachers need to be trained and supported to use the various digital tools in a relevant and efficient manner.

4.2. Support for Online Programme/Course Development

The significance of online course design should be highlighted in online teaching and learning (Gormley, 2014). According to Song et al. (2019), student participation and interaction issues could go unnoticed if online courses are not intentionally designed for online delivery. Online course design is "a context-specific form of instructional design oriented to online learning spaces" (Martin et al., 2019, p. 35). As a result, online course design encompasses the course's characteristics and the methods and techniques employed to develop it. In order to demonstrate how instruction takes place, the roles of the course instructors and the students in the virtual learning environment will be clarified, showing how instruction happens.

Online course-building abilities are vital for educators, instructional designers, and anyone interested in developing online learning experiences (Chittur, 2018). Online educators rely on a sophisticated repertoire of abilities, pursuits, and moral principles to address the demands of students who are geographically and temporally distanced from them yet connected to them via digital technology (Dennen & Jones, 2022). Aómez-Rey et al. (2017) underscored that meaningful and effective online learning facilitation is based on a plan and builds on a solid foundation of course design. According to Rapanta et al. (2020), there is a need to assist course instructors with knowledge and skills to convert courses developed for face-to-face teaching to online delivery. The transition from face-to-face teaching to online facilitation in response to the COVID-19 pandemic has been abrupt, and course instructors must adequately assist with the transition (Houlden & Veletsianos, 2020). There is, therefore,

a need to equip the course instructors with skills and expertise in online programme design and development.

In addition to subject matter, online course design should emphasise learning activities, assessments, and setting general expectations for student performance. Instructors should use facilitation to share their pedagogical values and expectations with students. According to Ma et al. (2015), interactions and advice significantly impact students' completion of learning activities, while course design impacts how students access learning resources in an online course. Additionally, the frequency and type of instructor-student interaction can be scheduled, impacting how students approach learning tasks (Dennen & Jones, 2022).

Instructors of online courses must also receive training in developing dynamic and captivating curricula (Haleem et al., 2022). Teachers with expertise in online course building can design dynamic, interactive, and successful courses. This can potentially enhance student engagement and retention, enhancing learning results. When creating virtual courses, educators must concentrate on how learners interpret tasks, interact with the material, and collaborate (Dennen & Jones, 2022). A multifaceted strategy that includes professional development training, mentorship, communities of practice, online resources, collaborative course design, and access to technology is needed to help educators build their online course design skills. Giving teachers the assistance and tools they need to hone their online course design abilities will enable them to produce engaging online courses that cater to students' requirements and broaden educational opportunities in a dynamic digital environment.

4.3. Support for Facilitation Skills

Online facilitation is a strategy for facilitating and advancing learning in a virtual setting by fostering interaction between and among students and facilitating interactive online learning activities (Karachristos et al., 2020). Furthermore, the functions of the online learning facilitator can be divided into a facilitator, course manager, subject matter expert, and mentor (Martin et al., 2020). According to Martin et al. (2019), online facilitation entails being present, accessible, willing to share expertise, and serving as a role model for the students regarding what it means to take an online course. The online course facilitators should be able to develop authentic and relevant course materials that connect to practice, utilise multimedia resources, assist students in creating digital content individually and collaboratively, empower students to reflect on their learning, and be able to explain the purpose of activities, technologies, and

assessments in the online course (Martin et al., 2019). They should be able to create authentic and pertinent course materials that relate to practice, use multimedia resources, support students in creating digital content both individually and collaboratively, give students the freedom to reflect on their learning, and be able to explain the purposes of the activities, technologies, and assessments in the online course (Kumar et al., 2019).

Online course facilitators require support in online course design as an essential skill. Kumar et al. (2019) note that the RASE online course design model may be employed to develop the course facilitators' capacity to develop online programmes. In the RASE model, four elements are critical, and these are digital resources (R), activities (A), support (S), and evaluations (E). Digital resources include the content, instructional materials, and tools students use while working on the online activities. There should be support mechanisms and activities to assist students with any form of assistance during online learning. Assessments should be built into the online course to assist students in evaluating themselves as they progress towards attaining set learning outcomes (Baldwin & Trespalacios, 2017).

4.4 Support for Promoting Interaction in Online Learning

According to Thurmond (2003, p 4), interaction is "the student's engagement with the technological medium used in the course, other students, the instructor, and the course content." A student must meaningfully connect with the course material, instructors, other students, and the technology used in the online learning activities for the interaction to be considered appropriate. Additionally, there should be reciprocity in the engagement. To this aim, interactions in online learning should be mutually beneficial and involve sharing knowledge or information.

The type of course instructor's support is another way to demonstrate the advantages of engagement in online learning. Online learners feel led to concentrate on their studies while the course instructor fosters discourse (Watson et al., 2017). Online learners should sense the instructor's presence through guidelines for controlling debate, remarks, and evaluations of their work. An essential component of virtual engagement in online learning is how the course teacher fosters conversation, directly impacting students' performance and perseverance. Online learners with support are likelier to stick with the course and complete it successfully (Costley & Lange, 2016).

Instructor connectedness, defined as a person's sense of belonging or presence, feelings of support, and level of communication/interaction with the instructor, is necessary in the virtual learning environment. According to Gallien and Oomen-Early (2008, p. 468), "students who feel connected to their instructor are more likely to feel satisfied and perform well in their online courses." Furthermore, instructor connectedness is described by D'Alba (2014, p. 8) as the "perceived closeness between the student and instructor as well as the instructor and student." The closeness between the instructor and the students may be seen in the way the teacher interacts with them frequently, in the promptness with which they respond to questions, in their availability to address concerns, and in the timely way they provide feedback on assessment activities. The instructor's connectivity enhances the pupils' interaction.

4.5. Support for Online Learning Material Development

Course instructors must receive training and help in the creation of digital learning materials in order to facilitate online learning effectively. Course instructors should be able to create relevant instructional materials for virtual learning environments. The calibre of the learning resources used in an online course determines how well it achieves its learning objectives (Tiwari & Tiwari, 2021). According to Maphosa et al. (2019), instructional materials are self-learning and act as the learners' instructors. They should convey knowledge and motivate and inspire students to study.

Instructors of online courses can use screencasts to produce engaging and interesting online content for their students. Screencasts are videos that capture activities on a screen (Pappas, 2018). Because they are visual, students are able to watch and participate in the process. A screencast can also have an audio recording added by the instructor. Apart from their interactive features, screencasts can be made and used in low-bandwidth contexts, facilitating knowledge sharing and increasing the accessibility of web resources (MacLeod et al., 2017). Moreover, screencasts can be made and used with learning management systems. It is no longer required to buy expensive cameras and production studios (Roslinda et al., 2017). By embracing technology improvements and using screen recorders on mobile platforms like Android, online instructors can generate screencasts at any time and from any location. In the teaching of science, particularly mathematics, screencasts have been developed (Soto & Ambrose, 2016).

Course instructors should be able to create podcasts as essential digital learning resources. These are audio or video files delivered over the Internet for personal computers and portable media devices (Flood et al., 2017). Podcasts, or an assortment of audio or video files, assist students in developing their research, writing, and listening skills. Additionally, they are essential in assisting students in developing their problem-solving and effective communication skills (Salmon et al., 2008). By producing content, recording in-class information, and improving students' study skills, podcasts have fundamentally altered the way people teach and learn (Salmon et al., 2008). With podcasts, students have the flexibility to listen to the content again for a deeper understanding and can access it whenever they need it.

Live lecture recording, also known as lecture capture, is a technique for recording lecture information to help students (Johri & Olds, 2014). Lecture capture technology records the stream live or records it for later playback later (Ferriday, 2015), synchronizing the presenter's voice and video with any visual aids (such a laptop, tablet, whiteboard, document camera, or visualiser) (Dona et al., 2017). Because recorded lectures consider different learning styles, they offer flexibility and enhance learning.

Creating adequate online learning resources necessitates a careful and iterative process that includes setting goals for the learning, choosing relevant materials and exercises, creating a user interface that works, integrating technology and multimedia, making sure the material is accessible, and maintaining it over time. These guidelines help educators and instructional designers provide online resources that support learners' learning objectives and cater to their requirements.

4.6. Support for Online Assessment

Assessment, according to Huba and Freed (2000), is "the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning." According to Mate and Weidenhofer (2021), online assessment poses challenges to academic integrity and student equity, even though it has the potential to improve teaching and learning by managing distance education, growing class sizes and staff workload and pedagogically by giving staff and students continuous feedback on their progress toward learning goals. The role of assessment in teaching and learning, the justification for

online delivery, academic integrity, accessibility of the assessment from both a technical and equity perspective, authenticity and structure of the assessment, and other factors must all be carefully considered in order to implement online assessments effectively (Mate & Weidenhofer, 2021).

Different forms of online assessments, including multiple-choice tests, short-answer questions, essays, projects, and performance evaluations, should be familiar to and usable by instructors teaching online courses (Appiah & van Tonder, 2018; Schutte, 2024). Teachers should select the assessment method that most closely matches their learning objectives, as each kind of evaluation has advantages and disadvantages of its own. Learners can track their progress and pinpoint areas for growth by using online assessment services to get instant feedback on their performance (Appiah & van Tonder, 2018). This could sustain students' motivation and interest in their studies.

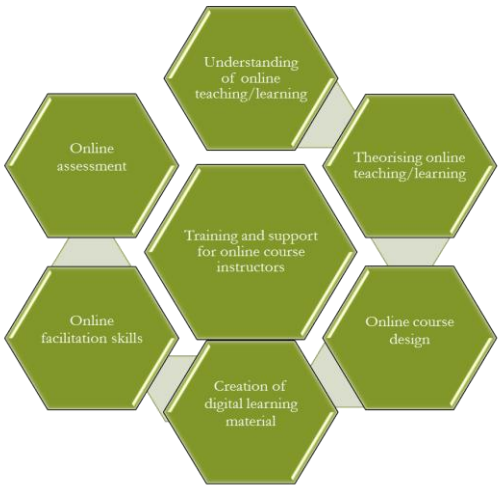
Course instructors should be introduced to the concept of authentic assessment. When students are asked to apply what they have learned in a novel, challenging scenario, that is an authentic assessment (Wiggins, 1998). According to Wiggins (1998), authentic assessment must meet several critical criteria, including being realistic, demanding creativity and judgement, requiring the student to "do" the subject, and replicating or simulating the contexts in which adults are "tested" in their personal, professional, and civic lives. Authentic assessments, which are pertinent yet have students participate in scenarios that resemble the real world, like a case study or project, are the two main formats in which these can be found. Real-world assessments require students to interact with real-world issues in their profession (University of Florida, 2018). Further, Siahaan et al. (2021) note that authentic assessment tasks must also evaluate the student's capacity to use a repertoire of knowledge and skills to navigate a complex task and provide appropriate opportunities for practice, consultation with resources, and feedback on performances and products.

When used well, online assessments can offer many advantages to instructors and students alike, including efficiency, flexibility, personalisation, data analysis, authenticity, and accessibility (Berezi, 2025). Teachers may give students a more effective, efficient, and engaging learning experience that supports their learning objectives by integrating online assessment into their teaching and learning processes (Spaska et al., 2025). Through deliberate training, course instructors for online learning should develop a holistic and deep understanding of assessment and what it entails.

5. Conclusion

In the online teaching and learning, learners are geographically and physically separated from the course instructors, yet technology connects them. Geographical and physical separation of learners and instructors requires reevaluating pedagogical practices to ensure effective learning. It is, therefore, essential to ensure that course instructors thoroughly understand what online teaching and learning entails and equip them with the appropriate knowledge, skills and attitudes necessary for online course delivery. Online instructors must understand the basics of online education and adapt to the changing technology landscape that affects material delivery and engagement. Innovative teaching methods and interactive technologies that encourage student participation and cooperation are crucial to online learning's success. Thus, online course teachers must master digital literacy, instructional design, and assessment methodologies. Institutions must offer comprehensive training programs that include initial orientation and continuous professional development to help instructors. This persistent support should include mentorship, tools, and communities of practice that help instructors share and collaborate. Educational institutions may improve online learning and educate instructors for a fast-changing educational landscape by addressing these components.

In the light of the findings, the recommendations of this study are summarised in figure.



Short courses, workshops, or lengthy courses that are credit-bearing can be used to introduce online course teachers to the concepts of online teaching and learning. Developing an expert and professional online course instructor requires having a thorough understanding of online learning theories, ideas, and practices. Additionally, teachers in online courses should

possess expertise in digital learning material generation, online facilitation, assessment, and course design. Online course teachers' capacity could be significantly enhanced by receiving ongoing support and training in online teaching and learning.

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References

Armstrong-Mensah, E., Ramsey-White, K., Yankey, B., & Self-Brown, S. (2020). COVID-19 and distance learning: Effects on Georgia State University School of Public Health students. *Frontiers in Public Health*, *8*(1), 1–10. https://doi.org/10.3389/fpubh.2020.576227

Babu, D. G. S., & Sridevi, D. K. (2018). Importance of e-learning in higher education: A study. *International Journal of Research Culture Society*, *2*(1), 84–88. https://www.scirp.org/reference/referencespapers?referenceid=3157515

Bailey, D. R., Almusharraf, N., & Almusharraf, A. (2022). Video conferencing in the e-learning context: Explaining learning outcome with the technology acceptance model. *Education and Information Technologies*, *27*(1), 7679–7698. https://doi.org/10.1007/s10639-022-10949-1

Baldwin, S. J., & Trespalacios, J. (2017). Evaluation instruments and good practices in online education. *Online Learning*, *21*(2). https://doi.org/10.24059/olj.v21i2.913

Berezi, I. U. (2025). Virtual learning environment: Redefining higher educational delivery for efficiency and accessibility. *International Journal of Educational Management, Rivers State University, 1*(1), 451–467. https://ijedm.com/index.php/ijedm/article/view/38

Boudreau, E. (2020). Toward a global response to COVID-19. *Harvard Graduate School of Education*. https://www.gse.harvard.edu/news/uk/20/04/

Chigbu, B. I., Ngwevu, V., & Jojo, A. (2023). The effectiveness of innovative pedagogy in the Industry 4.0: Educational ecosystem perspective. *Social Sciences & Humanities Open, 7*(1), 100419. https://doi.org/10.1016/j.ssaho.2023.100419

Chittur, D. (2018). *A phenomenological study of professors and instructional designers during online course development leading to enhanced student-centred pedagogy* (Doctoral dissertation, Pepperdine University). https://digitalcommons.pepperdine.edu/etd/935/

Cicconi, M. (2014). Vygotsky meets technology: A reinvention of collaboration in the early childhood mathematics classroom. *Early Childhood Education Journal, 42*(1), 57–65. https://doi.org/10.1007/s10643-013-0582-9

Costley, J., & Lange, C. (2016). The effects of instructor control of online learning environments on satisfaction and perceived learning. *The Electronic Journal of e-Learning, 14*(3), 169–180. https://academic-publishing.org/index.php/ejel/article/view/1753

Costley, J., Zhang, H., Courtney, M., Shulgina, G., Baldwin, M., & Fanguy, M. (2023). Peer editing using shared online documents: The effects of comments and track changes on student L2 academic writing quality. *Computer Assisted Language Learning,* 38(4), 865–891. https://doi.org/10.1080/09588221.2023.2233573

D'Alba, O. A. (2014). *A case study of student-instructor connectedness in an asynchronous modular online environment* (Unpublished doctoral dissertation). Georgia State University.

Dennen, V. P., & Jones, M. K. (2022). The role of the online instructor. In *Handbook of Open, Distance and Digital Education* (pp. 1–15). Springer. https://doi.org/10.1007/978-981-19-0351-9_62-1

Devi, K. S., Paranitharan, K. P., & Agniveesh, A. I. (2021). Interpretive framework by analysing the enablers for implementation of Industry 4.0: An ISM approach. *Total Quality Management & Business Excellence, 32*(13–14), 1494–1514. https://doi.org/10.1080/14783363.2020.1814031

Dona, K. L., Gregory, J., & Pechenkina, E. (2017). Lecture-recording technology in higher education: Exploring lecturer and student views across the disciplines. *Australasian Journal of Educational Technology, 33*(4), 122–133. https://doi.org/10.14742/ajet.3068

Ferriday, R. (2015). *Innovative lecture capture*. https://core.ac.uk/download/pdf/42521441.pdf

Flood, M., Hayden, J. C., Bourke, B., Gallagher, P. J., & Maher, S. (2017). Design and evaluation of video podcasts for providing online feedback on formative pharmaceutical calculations assessments. *American Journal of Pharmaceutical Education, 81*(10), 100–103. https://doi.org/10.5688/ajpe6400

Gallien, T., & Oomen-Early, J. (2008). Personalized versus collective instructor feedback in the online course room: Does type of feedback affect student satisfaction, academic performance and perceived connectedness with the instructor? *International Journal on E-Learning, 7*(3), 463–476.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education model. *The Internet and Higher Education, 2*(2–3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Gormley, C. (2014). Teaching the principles of effective online course design: What works? *Irish Journal of Academic Practice, 3*(1), 1–31.

Gómez-Rey, P., Barbera, E., & Fernández-Navarro, F. (2018). Students' perceptions about online teaching effectiveness: A bottom-up approach for identifying online instructors' roles. *Australasian Journal of Educational Technology, 34*(1). https://doi.org/10.14742/ajet.3437

Graham, C. R., Henrie, C. R., & Gibbons, A. S. (2013). Developing models and theory for blended learning research. In A. G. Picciano, C. D. Dziuban, & C. R. Graham (Eds.), *Blended learning: Research perspectives* (Vol. 2). Routledge.

Gupta, P. (2017). Role and need of research in higher education. *EdTech Review*. https://edtechreview.in/trends-insights/insights/2741-research-in-higher-education

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers, 3*, 275–285. https://doi.org/10.1016/j.susoc.2022.05.004

Harasim, L. (2012). *Learning theory and online technologies*. Routledge. https://doi.org/10.4324/9781315716831

Houlden, S., & Veletsianos, G. (2020, March 12). Coronavirus pushes universities to switch to online classes – but are they ready? *The Conversation*. https://theconversation.com/coronaviruspushes-universities-toswitch-to-online-classes-but-arethey-ready-132728

Huba, M. E., & Freed, J. E. (2000). *Learner-centred assessment on college campuses: Shifting the focus from teaching to learning*. Allyn & Bacon. https://eric.ed.gov/?id=ED438867

Islam, T., & Mahmudulhassan, M. (2025). Bridging the gaps: A bibliometric key theme analysis in multicultural education research (2019–2024). *Bulletin of Islamic Research, 3*(1), 1–24.

Jacobson, D., Chapman, R., Ye, C., & van Os, J. V. (2017). A project-based approach to executive education. *Journal of Innovative Educations, 15*(1), 123–145. https://doi.org/10.1111/dsji.12116

Johri, A., & Olds, B. M. (2014). *Cambridge handbook of engineering education research*. Cambridge University Press.

Karachristos, C., Kouvara, T., Orphanoudakis, T., Stavropoulos, E., Batsi, Z., & Chronopoulou, M. (2020). Defining e-learning facilitation: The Greek case study. In *Proceedings of ICERI2020 Conference* (pp. 6283–6290). https://doi.org/10.21125/iceri.2020.1353

Kumar, S., Martin, F., Budhrani, K., & Ritzhaupt, A. (2019). Award-winning faculty online teaching practices: Elements of award-winning courses. *Online Learning*, *23*(4), 160–180. https://doi.org/10.24059/olj.v23i4.2077

Kilinc, H., & Altinpulluk, H. (2021, February 19–21). Use of discussion forums in online learning environments. *2nd World Conference on Teaching and Education*, Vienna, Austria.

Langset, I. D., Jacobsen, D. Y., & Haugsbakken, H. (2018). Digital professional development: Towards a collaborative learning approach for taking higher education into the digitalized age. *Nordic Journal of Digital Literacy, 13*(1), 24–39. https://doi.org/10.18261/issn.1891-943x-2018-01-03

Lubinga, S., Maramura, T. C., & Masiya, T. (2023). The fourth industrial revolution adoption: Challenges in South African higher education institutions. *Journal of Culture and Values in Education, 6*(2), 1–17. https://doi.org/10.46303/jcve.2023.5

MacLeod, L., Bergen, A., & Storey, M. A. (2017). Documenting and sharing software knowledge using screencasts. *Empirical Software Engineering, 22*(3), 1478–1507.

Makda, F. (2025). Digital education: Mapping the landscape of virtual teaching in higher education – A bibliometric review. *Education and Information Technologies, 30*(2), 2547–2575. https://doi.org/10.1007/s10639-024-12899-2

Maphosa, C., Bhebhe, S., & Rugube, T. (2019). Interrogating the art of developing self-learning material for Open and Distance Learning (ODL) students. *International Journal of Innovative Research and Development, 8*(6), 191–199. https://doi.org/10.24940/ijird/2019/v8/i6/JUN19076

Martin, F., Wang, C., & Sadaf, A. (2020). Facilitation matters: Instructor perception of helpfulness of facilitation strategies in online courses. *Online Learning, 24*(1), 28–49. https://doi.org/10.24059/olj.v24i1.1980

Martin, F., & Bolliger, D. U. (2022). Designing online learning in higher education. In O. Zawacki-Richter & I. Jung (Eds.), *Handbook of open, distance and digital education* (pp. 1–20). Springer. https://doi.org/10.1007/978-981-19-0351-9_72-1

Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *The Internet and Higher Education, 42*, 34–43. https://doi.org/10.1016/j.iheduc.2019.04.001

Martin, F., Budhrani, K., Kumar, S., & Ritzhaupt, A. (2019). Award-winning faculty online teaching practices: Roles and competencies. *Online Learning, 23*(1), 184–205.

Mate, K., & Weidenhofer, J. (2021). Considerations and strategies for effective online assessment with a focus on the biomedical sciences. *FASEB BioAdvances, 4*(1), 9–21. https://doi.org/10.1096/fba.2021-00075

Pappas, C. (2018). 8 tips to incorporate screencasts into your online training course. *TechSmith*. https://www.techsmith.com/blog/screencasts-online-training-course/

Pavle, G., Nemanja, D., & Danislav, D. (2020). Video conferencing and its application in education. *Journal of Traffic and Transport Theory and Practice, 5*(1), 45–48. https://doi.org/10.7251/JTTTP2001045G

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning, 21*(3), 166–190. https://doi.org/10.24059/olj.v21i3.1225

Omar, N. (2023). Use of social media for distance learning during COVID-19 pandemic. In R. Hassan & K. Patel (Eds.), *Digital media & pandemic: Experiences & ameliorations* (pp. 330–334). The International Institute of Knowledge Management (TIIKM).

Ouellett, M. (2010). Overview of faculty development: History and choices. In K. J. Gillespie & D. L. Robertson (Eds.), *A guide to faculty development* (2nd ed., pp. 3–20). Jossey-Bass.

Oxnevad, S. (2013). 6 powerful Google Docs features to support the collaborative writing process. *TESL-EJ*. http://www.tesl-ej.org/wordpress/issues/volume14/ej55/ej55m1/

Rajaram, K. (2023). Future of learning: Teaching and learning strategies. In *Learning intelligence: Innovative and digital transformative learning strategies: Cultural and social engineering perspectives* (pp. 3–53). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-9201-8_1

Ramírez-Montoya, M. S., Andrade-Vargas, L., Rivera-Rogel, D., & Portuguez-Castro, M. (2021). Trends for the future of education programs for professional development. *Sustainability*, *13*(13), 7244. https://doi.org/10.3390/su13137244

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the COVID-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education, 2*, 923–945. https://doi.org/10.1007/s42438-020-00155-y

Rawal, A. P. (2025). Exploring the community of inquiry framework in higher education: A bibliometric analysis. *Cogent Education, 12*(1), 2460224. https://doi.org/10.1080/2331186X.2025.2460224

Reguera, E., & López, C. M. (2021). Using a digital whiteboard for student engagement in distance education. *Computers & Electrical Engineering, 93*, 107268. https://doi.org/10.1016/j.compeleceng.2021.107268

Roslinda, R., Asrina, S., & Siti, Z. (2017). A review on the innovative use of screencast technique for learning 3D animation software. *International Conference on Information Technology & Society, July 31–August 1, 2017, Penang, Malaysia.* http://fstm.kuis.edu.my/icits/2017/eproceeding/IC-ITS2017%20IT12%20pp42-48%20Roslinda.pdf

Salmon, G., Edirisingha, P., Mobbs, M., Mobbs, R., & Dennett, C. (2008). *How to create podcasts for education*. Open University Press.

Schleicher, A. (2020). The impact of COVID-19 on education: Insights from education at a glance 2020. *Organisation for Economic Co-operation and Development (OECD)*. https://www.oecd.org/education/the-impact-of-covid-19-on-education-insights-education-at-a-glance-2020.pdf

Secore, S. (2017). Social constructivism in online learning: Andragogical influence and the effectual educator. *E-Mentor, 3*(70), 4–9. https://doi.org/10.15219/em70.1300

Siahaan, J., Ping, M. T., Aridah, A., & Asih, Y. U. (2021). The effect of reflective journal authentic assessment on students' writing competence and motivation. *Educational Studies: Conference Series, 1*(1), 60–70. https://doi.org/10.30872/escs.v1i1.866

Siemens, G. (2004). *Connectivism: A learning theory for the digital age.* http://www.elearnspace.org/Articles/connectivism.htm

Skledar, M. A., Šćukanec, S. N., & Farnell, T. (2021). The impact of COVID-19 on higher education: A review of emerging evidence, analytical report. *European Union Publications Office*. https://op.europa.eu/en/publication-detail/-/publication/876ce591-87a0-11eb-ac4c-01aa75ed71a1/language-en

Song, D., Rice, M., & Oh, E. Y. (2019). Participation in online courses and interaction with a virtual agent. *International Review of Research in Open and Distributed Learning, 20*(1), 43–62. https://doi.org/10.19173/irrodl.v20i1.3998

Sony, E. A., Okeke, G. N., Obiorah, C. A. R., Aku, U. T., Nesiama, O., Agbakhamen, C. O., & Okoro, O. P. (2025). Ethical standards in research: A professional imperative. *International Journal of Innovative Scientific & Engineering Technologies Research, 13*(1), 94–104. https://doi.org/10.5281/zenodo.14875237

Soto, M., & Ambrose, R. (2016). Screencasts: Formative assessment for mathematical thinking. *Technology, Knowledge and Learning, 21*(2), 277–283. https://doi.org/10.1007/s10758-015-9272-6

Spaska, A., Kozub, H., Abylasynova, G., Kozub, V., & Koval, Y. (2025). Evaluation of innovative teaching methods using modern information technologies. *Jurnal Ilmiah Ilmu Terapan Universitas Jambi, 9*(1), 422–440. https://doi.org/10.22437/jiituj.v9i1.38107

Szabó, Z. A., Soós, S., & Schiller, E. (2025). Deductive content analysis as a research method in the field of education sciences – A systematic literature review of journal articles in

Web of Science (2019–2023). *Journal of Adult Learning, Knowledge and Innovation, 7*(2), 49–57. https://doi.org/10.1556/2059.2023.00094

Thurmond, V. A. (2003). *Examination of interaction variables as predictors of students' satisfaction and willingness to enrol in future Web-based courses while controlling for student characteristics* [Doctoral dissertation, University of Kansas].

Tiwari, V., & Tiwari, A. (2021). A study of effectiveness of online mode of education in Pune region. *International Journal of Future Generation Communication and Networking, 14*(1), 2177–2190.

Tisdell, E. J., Merriam, S. B., & Stuckey-Peyrot, H. L. (2025). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.

Tracy, S. J. (2024). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). John Wiley & Sons.

University of Florida. (2018). Authentic assessment in online learning. http://citt.ufl.edu/online-teaching-resources/assessments/authentic-assessment-in-online-learning/

Wagner, E. D. (1994). In support of a functional definition of interaction. *The American Journal of Distance Education, 8*(2), 6–29. https://doi.org/10.1080/08923649409526852

Watson, F., Castano, B., & Ferdinand-James, D. (2017). Instructional strategies to help online students learn: Feedback from online students. *TechTrends, 61*(1), 420–427. https://doi.org/10.1007/s11528-017-0216-y

Wichadee, S., & Suwantarathip, O. (2014). The effects of collaborative writing activity using Google Docs on students' writing abilities. *The Turkish Online Journal of Educational Technology, 13*(2), 148–156.

Wiggins, G. (1998). *Education assessment: Designing assessments to inform and improve student performance*. Jossey-Bass Publishers.

Wu, B., Hu, Y., Gu, X., & Lim, C. (2016). Professional development of new higher education teachers with information and communication technology in Shanghai: A Kirkpatrick's evaluation approach. *Journal of Educational Computing Research, 54*(4), 531–562. https://doi.org/10.1177/0735633115621922

Zhong, Q. M., & Norton, H. (2019). Exploring the roles and facilitation strategies of online peer moderators. *Studies in Self-Access Learning Journal*, *10*(4), 379–400. https://doi.org/10.37237/100405

Zhong, Q., & Norton, H. (2018). Educational affordances of an asynchronous online discussion forum for language learners. *Teaching English as a Second Language Electronic Journal*, *22*(3).