Digitalisation of Education: Challenges and Issues in Virtual Pedagogical Competence

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ABSTRACT

Thesis. Teachers have been tasked with using digital tools in their classrooms to prepare universities for the challenges of the twenty-first century. The present study explored the nuances of digital pedagogy and competence, aiming at teachers teaching

English skill courses using digital platforms, consisting explicitly of cultural, societal, interpersonal, and moral concerns related to acquiring knowledge with and from digital technologies to emphasise the praxis of digital competencies.

Concept. Pedagogues in higher education have used digital means during the pandemic, resulting in a number of teaching-learning platforms to promote efficient learning outcomes. The study found information and communication technology (ICT)-based instructional designs that supported exceptional educational outputs; however, there are issues and problems with the virtual modus operandi.

Results and conclusion. This research examines issues and challenges in digital teaching and how it affects in-service teachers' perceptions of digital education technology. The study uses a qualitative method by interviewing teachers at the undergraduate level in Saudi Arabia to gather information about teachers' perceptions. Twenty-nine (29) teachers participated in the study, teaching English skills courses at Prince Sattam Bin Abdulaziz University. The findings indicate that there is a need for in-service training of teachers on the different platforms that are being used to teach the English language. Moreover, the key findings of the present study are the unavailability of immediate feedback, less interaction, fear of technology-driven pedagogy, and difficulty in practice-driven exercises.

Keywords: digital pedagogy, technology-education, ICT-based education, online teaching, digital competence

Introduction

This research was conducted as part of the "*digitalisation of education*" initiative, which intended to establish a balance between advancing digital pedagogy expertise and adopting digital assessment technologies. However, the idea is to identify how teachers are coping with the situations and whether they are still seeking theoretical and real-world guidance on creating successful e-learning methods and tasks in the interim (Alam & Hameed, 2023). The expression "*digital economy*" refers to industry activities where data in digital form constitutes the primary production input, internet services are widely available, and the evaluation and handling of massive quantities of data result in improvements in different methods of pedagogy, science, technology, and so on. Undoubtedly, the development of new virtual teaching platforms has assisted in establishing the objective of preparing the workforce for the digital economy.

Similarly, the global education system is progressively incorporating online learning and courses. Education is now more manageable and widely available through online channels. Around the world, digital technologies are an essential aspect of daily life and are increasingly present in educational institutions (Kobylarek, 2017). Colleges and schools where education is self-governed in most parts of the world are working harder to provide all students with access to computing devices for studies. A system

of the 'one child must have one device' rule permits the usage of a digital gadget whenever necessary and positions digital use as the background standard rather than a unique novelty. The pandemic has allowed teachers to evaluate their existing approaches to teaching and learning and investigate the potential benefits and drawbacks of using digital pedagogies in the classroom (Dacholfany et al., 2024; Duka et al., 2024; Kobylarek et al., 2021). This article analyses pertinent literature on remote emergency learning during pandemic reside-at-home phases based on secondary data analysis for pre-and-post COVID-19.

The study explains the pertinent research on the application of digital pedagogies for remote instruction and justifies the usage of future strategies. Then, the researchers go over the experiences and secondary sources that served as the basis for this study and explain how future techniques were employed to examine such arising scenarios. In order to define what benefits digital pedagogical models could provide in the field of education in the future, descriptions of the developed scenarios are given along with interview anecdotes provided by actual teachers to understand the issues and challenges related to virtual pedagogy.

Literature Review

To better comprehend the transition from in-person education to emergency remote learning in both the K–12 and higher educational panoramas, Aras Bozkurt et al. (2020) carried out a comprehensive, international research. They looked at insights acquired and offered suggestions from thirty-one distinct nations using a collective case studies method. The digital disparity, social injustice, equity, and well-being were recurring themes. For instance, parents were stressed out by their daily responsibilities and new educational tasks, and most stakeholders felt more anxious, which called for strategic solutions. The study brought pedagogical difficulties to light, including the necessity for alternate evaluation methods, data privacy, and ethical issues related to the extensive use of online practices.

Sohaib Alam et al., (2022) highlight the difference between digital pedagogy and face-to-face teaching by emphasising the search for a methodology that delivers and promises maximum learning outcomes in classroom teaching. It focuses on the problems and issues learners and teachers face teaching in online or blended modules. A similar study by Basem O. S. Al-Hawamdeh and Alam (2022) foregrounds learners' problems while studying during the pandemic. It highlights learners' issues and discusses the relationship between digital strategies and student-centred learning. Anne Yates et al., (2021) looked at the experiences of senior secondary students using technology to promote learning at home during a closure at the school. The participants reported having more control and flexibility over their time, while others lacked the requisite abilities to use these advantages. Students discussed effective digital strategies that promote happiness and encourage motivation and teamwork (Tkáčová, Pavlíková et al, 2023).

Matthew Kearney, Sandra Schuck and Kevin Burden (2022) looked into technology-enhanced teaching by conducting 40 interviews with teachers, pupils, and guardians. Students believed they were less involved with educators and classmates and saw no social interaction, although educators stressed involvement strategies. They also discovered that online schooling was less individualised.

By surveying Spanish instructors, Marc Beardsley et al., (2021) looked into variations in teachers' electronic behaviour. Investigators surveyed educators twice and conducted interviews with them. They also examined the guidance professionals sought on Twitter. Teachers felt more knowledgeable and enthusiastic about utilising digital technology in the curriculum. They asked for input on Twitter regarding their academic prerequisites and the development of their own teaching-related digital content.

The only way to continue education and learning during the worldwide pandemic is to adopt new teaching methods and strategies under the impact of virtual phenomena. Because students continue to struggle with generating language in a spontaneous context, prior methods of instruction were unable to aid pupils in enhancing their imaginative and receptive language skills.

Pegger A. Ertmer (1999) classified obstacles to change as extrinsic and intrinsic factors that interfere with the attempts of educators to incorporate ideas into practice. While some teachers may battle to surmount innate barriers related to teachers' confidence, views, and the value they place on technology, others may be limited by outside obstacles like limited access to resources, training, and guidance. The inherent unity of a democratic society can be brought to life by imagining or translating the texts, ideas, language, and behaviour, collectively thinking of unique meanings to morality, ethnicity, and culture that have significance in the modern context.

Linda Darling-Hammond and Maria E. Hyler (2020) provided authorities and academics with recommendations on how to foster teaching and learning during and after the pandemic. They warned of challenging concerns, including the imperative to fulfil classroom adolescents' academic and social-psychological requirements and maintaining increasing disparities in an environment of severe educator shortages and poor staff morale. In "unpredictable combinations of distance learning, blended instruction, and in-class learning", they emphasise the obligation for future professional development that enables lecturers to prepare for novel teaching tasks.

Objectives of the Study

- To gather information regarding digital pedagogy problems and their challenges before and after switching to pedagogy
- To design classroom inclusiveness instruction and support to teachers.
- To develop critical thinking and use digital devices for educational purposes.

Methodology

The present research aims to learn more about how teachers and students perceived and dealt with online courses by seeking input via an interview. The study follows a qualitative methodology of interviewing teachers teaching skill courses at Prince Sattam Bin Abdulaziz University. Following COVID-19, the education system worldwide recently implemented a change that involves offering sessions online (Klimanska et al., 2024). The perceptions and concerns of college and university instructors and students regarding taking distance learning classes made obligatory in the aftermath of COVID-19 are thus explored with the help of personal interviews. The researchers conducted interviews with a selection of twenty-nine (29) teachers teaching English skill courses to get insight into the pedagogy's condition and how it goes on with online modes.

Discussion

Artin Göncü and Mary Gauvain (2012) have used sociocultural theories to consider how digital technologies could improve learning. According to this viewpoint, learning is a reciprocal interaction between beginners and more knowledgeable people, during which beginners acquire the objectives, steps, and circumstances pertinent to activities that determine the continuous practices inside and beyond contexts and groups (Rogoff, 2003). Attendees in such an endeavour indicate the nature of the resources available and the mediation process provided by the setting's context and particular instruments. The idea of learning is active, with students collaborating, integrating, or utilising the more profound implications offered to them as they gain expertise. The resources available and the means of negotiation provided by the conditions and culture are reflected in participating in such events. Various new types of research on education in universities during the recent pandemic-related teaching times are now being researched. These studies set apart this situation from organised practices of home-schooling, distance and mobile education (Kearney, Schuck, Fergusson & Perry, 2022). To inform strategies that address schooling problems in uncertain time-specific tools within those settings in the future, they underline the significance of better understanding the experiences of teachers, students, and other stakeholders during this crisis period. The idea of learning is active, with students negotiating, internalising, or appropriating the meanings offered to them as they gain expertise.

The response fits with a paradigm of technology assimilation that has been put forth. The framework by Rhonda Christensen and Gerald Knezek (2008) identifies three key components for a high level of technology cooperation, including teachers' perspectives towards using digital technologies in the classroom, their digital expertise and sufficient access to digital technology as a tool (access to technology).

Institutions create space for critically framing what modern literacy practices are and 'how instructional practices may evolve to provide an opportunity to more multimodal format, electronic means of knowing' when seeing the advantages of digital tools as distinct and independent literacy procedures. Teachers rely on a paradigm of critical attitude to help us move our attention from the instructional techniques used to the critical practices and 'resilience that accompany modern knowledge with tech.' According to Jamilee Baroud and Pooja Dharamshi (2020), a critical attitude has four characteristics: active engagement, entertaining alternative ways of existence, accepting accountability for inquiry, and reflexive. The findings showed that this model could account for over ninety per cent of the variation in the extent of modern technology integration in classrooms. Many methods and ideas have been put forth to encourage global digital education (Slobodová-Nováková et al., 2024). The problematic societal, moral, and philosophical assumptions that reinforce these changes are frequently overlooked in the promise that digital education will transform learning and instruction through, for instance, the widespread accessibility of online educational tools or profoundly restructured online instructional experiences (Aslan & Zhu, 2016). Although online classroom circumstances, MOOCs, and similar programmes are attracting much attention, it is less specific whether these initiatives are prompting enough educational, theoretical, and philosophical discussion.

Digital Competence and "Learning Designs" Efficiency

The term digital competence is frequently used and can be described in various ways by academics and authorities. The ability to effectively employ ICT with appropriate pedagogical knowledge and awareness of its effect on students' learning processes is referred to in this research as teachers' digital competence. Teachers have been tasked with increasing the application of technological resources to better prepare classrooms for the changing demands of the twenty-first century (Albion et al., 2015). The learning environment is frequently controlled and directed by the instructor in classrooms where instructors and students participate with one another.

Teacher's Commitment for Educational Endeavour

A teacher develops these classes to engage the students and give them an experience that will lead to acquiring knowledge. The teacher's commitment to educational endeavour is frequently more indirect in settings where technology has been employed to aid studying. Many choices that the instructor might have made for the students instead must be determined by the learners themselves. Only a tiny percentage of teachers reported being content with their knowledge of and proficiency in employing digital

tools in the classroom, and they were inadequate in incorporating the required promotion of digital competence into their practice (Mouza, 2008). Researchers discovered that even when some instructors incorporated digital competence into their work, the application of digital tools was restricted to a fundamental level and for demonstration reasons (Beetham & Sharpe, 2007). Students generally receive written notes, exercises, and guidelines designed to assist them in understanding e-learning environments. Although not always the same instructors who work with the students developed these notes, exercises, and instructions.

Traditional Practice of Instructional Design

Learning styles describe environments and settings that are frequently adaptable and unrelated to the instructional routines that have previously defined education techniques (Oliver et al., 2007). The traditional practice of instructional design has long been well-established, and numerous standards and models have been created to assist instructional designers as they create educational routines. Given the context-specific nature of knowledge building, David H. Jonassen (1994) contends that there cannot be any solid models guiding the design of constructivist settings. Instructional design theory today supports guidelines and over-arching notions through which learning settings can be designed. Contrary to what many instructors are used to, the use of curriculum designs in an educational planning procedure is less rigid and has fewer limitations. Although changes in learning activities and interactional characteristics have been mentioned in studies, these possibilities may not always translate into impacts in more significant rollouts, with the accompanying variability in the execution process. Several academics have consequently advocated for research to concentrate on what constitutes effective teaching within digitally enabled settings and how instructors might be supported to create training that depends on the possible benefits while evading difficulties (Alam, 2025).

Teachers Designed Strategies to Maximise Students' Involvement.

Teachers in the cluster used typical digital pedagogy in several types of research as they struggled to rethink their lessons to maximise students' learning. The educational strategy was designed to increase students' involvement by producing digital learning objects, which were then shared on students' blogs for audiences that included relatives, classmates, or the wider community. Making learning and instruction more visible was done to strengthen the relationship between guardians and the educational institution, encourage pupils to respond to feedback, and measure the number of individuals visiting their websites. This effort was backed by research-practice collaboration, where academics, educational leaders, and trainers collaborated to continuously analyse research results to improve teaching strategies. Despite increasing governmental efforts

to integrate digital technologies into teacher education and reading programmes, these initiatives are proving difficult. In addition to learning how to use digital technologies technically, teacher educators still have difficulty rethinking their classes, so they use digital tools to implement critical approaches. A gap remains even though higher education has increasingly developed spaces for developing digital tools and skills (such as digital learning hubs).

Teacher's Perception and Challenges about Online Teaching & learning

Information and communication technologies have significantly changed all facets of modern society and culture. The abilities and views of instructors within the system are crucial to assimilating transformation procedures in schools and the entire educational system. Many instructors approach ICT with a shallow, traditional-conservative mindset (Bauer & Kenton, 2005). Therefore, using ICT typically does not prompt teachers to re-evaluate and modify their teaching and learning procedures to take advantage of the novel possibilities presented by technological advancements. Even though online classes could be taken from the comfort of a residence, saving travel time, teachers thought they did not appear as successful as the classroom teaching method. The interview discloses various aspects and challenges, which are discussed below:

- *Lack of Physical Interaction*: The primary issues were an absence between the teacher and the students, inadequate levels of interaction, a failure to involve the entire class, and technological challenges. However, teachers did concur that this new chance to conduct lessons online has given them more confidence and enabled them to experiment with and use novel methods of instruction (Ball, 2000). The teachers disclose that the students are less interested in learning and engaging in the procedures. They are obliged to join the session for their attendance.
- *Lack of immediate feedback*: Faculty and students can receive immediate input about the calibre of the lessons, delivery, and experience in a face-to-face classroom environment. A teacher may monitor students' body language in a classroom setting, and these nonverbal signals enable the teacher to instantly change their teaching strategy to meet the requirements of the students.
- *Fear of Technology*: Additionally, a lack of work-related fulfilment was noted while enrolled in online courses. Some even believed their inability to use laptops or computers prevented them from efficiently utilising online education devices.
- *Lack of Involvement*: Many instructors complained about the lack of involvement and enthusiasm from the pupils they taught. They stated that the main problem they encountered during online classes was that students frequently gave weak excuses for being unable to attend, such as broadband connectivity issues, poor audio and video quality, etc. It was difficult for them to determine whether these excuses were sincere or a way to avoid attending the classes.

- *Platforms are not always trustworthy*: Other platforms claimed to be utilised by instructors in addition to those already mentioned, including Google Duo, Zoom, YouTube, Moodle, Microsoft Team, WhatsApp, etc. Some teachers believed this online learning medium was not trustworthy and private numerous incidents were recorded regarding disrespectful remarks and noises.
- *Low Absenteeism results in low motivation at both* ends: They claimed that students frequently offered justifications during online courses and displayed a lack of seriousness. Teachers often experience a loss of enthusiasm because of this. Most of them stated that low absenteeism was a cause for concern, partly because some students were in their hometowns where there were difficulties with connectivity. In some places, students lacked incentive to come to class.
- *Challenges for Edtech Culture*: Compared to online channels and Studio classes in Edtech culture, the ability to ask more specific questions and provide personalised focus in a classroom setting allows teachers to understand better how well students grasp the ideas being taught. What might be quickly understood and addressed in an online class in a traditional setting calls for more inquiry and attention (Gallagher et al., 2021).
- *Fear of Studios and Recorded Lectures*: In many digitalised class recordings, the professors make numerous revisions and evaluate both their own and other people's work. The repetitive listening to the lesson is time-consuming and irritating. The recording, grooming, and other time constraints make the substance or subject matter less significant and concentrated. It is challenging, tedious, and costly due to the contact and collaboration with workers outside the scholastic or primary teaching area (Cowling et al., 2022).
- *Pedagogy is dependent on PPTs, PDFs and Soft copy Supplies*. Other drawbacks of virtual instruction mentioned by teachers included: some thought it took more time because they had to prepare PPTs and additional materials for the classes; others thought the online environment was too formal, lacked a sense of community, and was not vibrant. Since the required 15–20 slides only contain a handful of content, teachers frequently felt that their subject matter was dull. They had to include images and animated material to keep the pupils interested, which cost them time. The natural flow of the lesson and the material is lost in the procedure (Zheng et al., 2016). Such restrictions in terms of text fonts, alignment, line spacing, etc., are guaranteed to take time because all teaching institutions in various secondary and higher grade levels keep standardisation and uniformity. Most teaching professors claim they do not attend classes while reading from books and other supplementary authentic sources; instead, they use PowerPoint presentations with a finite number of slides and information. The availability of previous PPTs limits the potential for current changes and facts in terms of sociocultural terminology and PDFs from years where the same material was used for all batches (Underwood, 2004).
- *Difficulty in Practical and Lab Works*: According to the instructors, students found it less challenging to study theoretical topics than practical ones, like architecture, finances, sciences, mathematics, and others.

Inferences and Findings on Digital Pedagogy and Smooth Learning Process

The study has outlined a few essential ways that exercises in electronic educational environments, backed by resources and supplies, can enhance student learning alternatives. These possibilities concern (a) time-saving methods that maximise learning, (b) emotional learning, which includes involvement, (c) a broader and more significant set of competencies, (d) the use of both active and passive learning processes, and (e) modified patterns of teaching communication.

- *Facilitating pedagogy of Emotion, Professional and Diversified Learning:* As facilitators, teachers should develop interactions with students that are both genuine and caring. They should also remain current by continuously expanding their professional knowledge (Svoboda et al., 2024). To accomplish effective learning through collaborative or community learning and be comfortable with the digital world, students should take the initiative to learn, be self-reliant and curiosity-driven, and work out their passion and internal motivation. Technology should foster a supportive atmosphere, enable the demonstration of phenomena and processes, broaden the scope of learning opportunities, and assist in tackling student diversity and narrowing achievement disparities (Westbrook et al., 2013).
- *Filling the gaps between Administrations, Teachers, and Graduates:* Young teachers believe that access to adequate training for the teachers and a friendly principal could help them apply digital teaching. Similarly, a knowledgeable instructor would assist the students in maximising the benefits of digital learning to accomplish objectives (Bauer & Kenton, 2005).
- *Improving the pedagogy of cluster or community building:* The local public institutions have "clustered" and developed a learning organisation that provides financial assistance to families purchasing affordable digital devices for their children, manages agreements for services with infrastructure suppliers, and finances for teacher professional growth.
- *Improved Pedagogy for Equality and Employment:* The initiatives promote equitable utilisation of technology for learning, improved educational outcomes, and employment readiness (National Research Council 2012). A shared online curriculum used in all institutions and values student involvement in education propels the shift in pedagogy.
- *Cycle of Learning:* The pedagogy is designed as a cycle of learning in which students acquire academic knowledge, often through comprehension, debate, or research and then use that knowledge to generate competence. Widespread digital access has been linked to changes in more time devoted to learning, which has led to an upswing in student output (Beg et al., 2025).
- *Writing- Rewriting and Research:* Writing, revising, and collecting information from the internet were cited as the most frequent uses of computers in the examined studies. This is consistent with studies showing more significant involvement in writing. This type of synthesis of many different sources is conventional and can be completed more effectively online, an increasingly essential task in the digital world. However, after the introduction of AI in education, academic integrity is a concern in academia to accept or incorporate into classroom pedagogy (Alam et al., 2024).

Conclusion

In many ways, COVID-19 has accelerated and worsened concerns about the value of instructional technology in higher education (Kobylarek, 2021). This research has investigated concerns about how opinions have been affected by educational-technological procedures. One of the most crucial learning components is the framework and process of feedback, which requires meticulous planning and execution. To optimise involvement and the possible effect of learning from the feedback process, competency in providing feedback is crucial for everyone involved. The relationships, duties, and obligations must be recognised, and feedback must be provided sincerely and pertinently (Petrovič et al., 2024; Tkáčová, Maturkanič et al., 2023). Although face-to-face on-campus learning differs from online learning, both will probably use complementary and comparable pedagogical modifications. Focusing on teaching serves as a constant reminder to writers of the central component of higher education. This article concludes this fundamental idea and shows how it directly links to educational technology interactions between teachers and students. Applying best practice technology requires understanding the pedagogies that are "successful" and "workable" in various settings and how students learn best across those contexts. Many higher education instructors require enhancing their students' critical thinking abilities to prepare them more effectively for postgraduate and real-world circumstances. People in small or big nations, advanced or less-developed countries, must work cooperatively in the academic world and use digital knowledge and technological know-how to build critical thinking skills. This would assist the entire academia with remedies for complicated issues that will help it succeed in today's digitalised environment.

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