



Implementation of the Virtual Learning Models during the Covid-19 Pandemic: Students' Perspectives and Its Lessons

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Abstract: This study aims at analyzing the existence of the implementation of the virtual learning models during the Covid-19 pandemic to encourage, explore, and evaluate effective online learning based on the students' perspectives. This type of research is library research using qualitative descriptive methods. Data in this study were students' perspectives from many contemporary literature sources, such as journals, books, and other relevant works of literature. By using the Connectivism theory and the PICRAT model, the results indicated that students faced many problems during the Covid-19 pandemic due to inexperienced teachers. Furthermore, the online system was not equipped with optimal learning infrastructure, giving rise to negative and positive aspects in many aspects of learning. Both teachers and students in countries affected by the Covid-19 pandemic faced similar problems, namely the online learning system which was not handled properly. Thus, with a proper understanding of the strengths and limitations of online learning, it is feasible to offer a better instructional atmosphere for students by making appropriate modifications. This study concludes that online learning and the dynamics of education reform still serve as a model for future educational development, especially for facing a pandemic. The significant contribution of this study is the findings regarding the potential of technology and the barriers that students face while learning due to digital mechanisms.

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Introduction

For decades, reform-based movements in teaching have revolved around the idea of improving students and viewing education as a medium of academic achievement (*Karatas et al.*, 2022; Yuan, 2021; Richter *et al.*, 2021). Through this notion, the effectiveness of teaching strategies and models becomes a standard for the effective teaching process (Butnaru *et al.*, 2021). In addition, teachers must have competence, quality (Zarnigor, 2022), and care (Sharma *et al.*, 2022). They also have to participate in revising the curriculum and incorporating relevant learning content (Sharma & Yukhymenko-Lescroart, 2022), while evaluating and assessing student performance seriously (Lutovac & Flores, 2022; Roxå *et al.*, 2022). This is because they must provide opportunities for students to learn, grow, and develop (Molina *et al.*, 2022). However, in certain times and conditions, these objectives have not been fully achieved. Furthermore, the extraordinary times of the Covid-19 pandemic have threatened the aspect of education (Núñez-Canal *et al.*, 2022) in many countries, including Indonesia (Suyadi *et al.*, 2022). Many studies state that re-evaluating student performance and improving schools and classrooms have led to effective teaching strategies and models (Upadhye *et al.*, 2022; Loughlin & Lindberg-Sand, 2022).



The issue of the lack of synergy between learning theories, teaching strategies, and models and their principles is responsible for delays and obstacles in teaching development (Bembenutty, 2022; Quarmby *et al.*, 2022). In the current context, the Covid-19 pandemic that creates dilemmas in education must be resolved so that relevant training programs and learning pedagogies may continue to be carried out to help students master online-based learning. Esawe (2022) proposes a training methodology, theory extension, technology model, and effective learning management system for dynamic communication between teachers and students. The internal aspects come with online learning, namely training the human mind to adapt to digitalization and use it wisely. Furthermore, she emphasizes the role of the heterogeneity involved in teaching and learning processes around the world. A study conducted by Akdeniz & Alpan (2020) shows that no definite pedagogy has been used for online education.

In the current pandemic, when conventional teaching and learning processes are no longer an option, online learning can help maintain education because of its flexibility and accessibility (Coman *et al.*, 2020). The rationale behind online education is to reduce the risk of students and teachers being exposed to Covid-19 while ensuring continuity of education during the pandemic. Online learning refers to web-based software for distributing, managing, and monitoring virtual learning with the help of the internet. The internet allows teachers and students to connect online and exchange information through platforms (Huang *et al.*, 2020). However, due to the increasing use of online modes during the Covid-19 pandemic, it is very important to evaluate the efficiency of this model in the context of teaching and learning.

In the previous eras, many scientific works have put forward the conception, responsibility, and role of teachers in student-centered classrooms to assist in the implementation of new pedagogies (Chen *et al.*, 2021). Contemporarily, recent studies propose strategies for student-centered learning (Dunbar & Yadav, 2022; Capone, 2022; Carloni, 2022). They suggest that students should be independent of the teacher's directions and instructions, punishments, corrections, and others. However, teachers must establish autonomous learning as a technique for students to overcome distractions from their educational activities. In addition, teachers must motivate students through interesting learning materials and instructions as part of classroom learning to support the learning process. According to Urban & Jirsáková (2022) and Pence (2022), motivation helps students in developing their self-confidence. Meanwhile, other studies suggest innovative teaching methods in classroom pedagogy (Sengupta & Blessinger, 2022). They presume that there are new pedagogical challenges, considering the current turbulent pedagogy, theory, and education process. The existing current studies focus on pedagogical innovation and lay the foundation for the study of online learning due to globalization and modernity effectively. Students in the era of digitalization have been highlighted along with the renewal and use of appropriate methodologies.

Some studies have examined the positive and negative aspects of e-learning during the Covid-19 pandemic (Maatuk *et al.*, 2022; Çevik *et al.*, 2022). These studies specifically focus on the opportunities and problems faced by educational institutions or knowledge distribution during the Covid-19 pandemic including providing a holistic view of the problems in online communication and the lack of technological skills that teachers possess. Moreover, Mahdy & Sayed (2022) provide a detailed analysis of the Covid-19 pandemic by paying attention to lockdown protocols, social distancing, and schools and universities going online as a result of the pandemic. With digital technology, the pandemic accelerates the pedagogical transformation and modification of education. Thus, its impact on students



should be explored deeply, including how developing countries survive the Covid-19 pandemic.

In this modern era, Shernoff *et al.* (2020) declare digital technology important for a better understanding of teacher interest in curriculum design, instruction, and teaching. In addition, Mapp (2022) mentions that technology opens the door for new teaching methods that can support the educational process, including the learning of various types of students. However, by considering the ideas on which the will and skills are based and the availability of model tools, the affordability of technology in teaching & learning processes must be aimed to aid digitization in primary (Spiteri & Rundgren, 2020) and secondary education institutions (Koh *et al.*, 2022).

Frانيا & Correia (2022) highlight the transformation in Polish and Portuguese education to collaborative online learning, which has resulted in excellent teacher development. Collaborative online learning in many studies has proven effective as a method and has succeeded in increasing and synergizing the use of theory and practice by educators (Ng *et al.*, 2022) including in the post-Covid-19 pandemic (Lei & Medwell, 2021).

Harasim (2017) puts forward one of the important elements of technology-based learning. He proposes that traditional pedagogy cannot be changed only through technology in schools to achieve communication changes, both professional and personal communication in the 21st century. The use and usefulness of social media platforms (e.g., YouTube, Google Meet, and other similar media) must be reshaped when being used in traditional classroom settings. In his study, Harasim focuses on human responsibility (that arises with various types of human thought), learning processes, practitioners' and students' skills, and others.

In reviewing the related works of literature, studies in the Indonesian context on student perceptions regarding the effectiveness of teaching strategies and models during the Covid-19 pandemic have not been found. To fill this gap, this study seeks to answer several questions: (1) The relationship between digital learning and student-centered learning strategies; (2) Online learning and its challenges during Covid-19; (3) The impact of digitalization on students' mental and physical health and the way they deal with transformative learning mechanisms; (4) Digital learning strategies during Covid-19. Meanwhile, the objectives of this study are to analyze the existence of the implementation of the virtual learning models during the Covid-19 pandemic to encourage, explore, and evaluate effective online learning based on the students' perspectives.

Research Method

The type of this study was library research which is commonly used in qualitative studies. It is a type of research that examines extensive library sources in the form of books, notes, or reports from related previous studies (Mann, 2015). Meanwhile, the employed method was a qualitative research method. It is a research method that aims to understand phenomena experienced by research subjects, such as behavior, perceptions, motivations, actions, and others, holistically. The phenomena are then described in the form of words and language in a specific natural context and by utilizing natural methods (Jamali, 2018; Patton, 2005). The data in this study were obtained by studying and evaluating contemporary research articles related to online-based learning and teaching during the Covid-19 pandemic. This study highlighted the effectiveness of virtual teaching strategies and models by focusing on students' physical and mental aspects and providing a qualitative interpretation of the positive and negative aspects of teaching and learning processes during the Covid-19 pandemic.



This study concentrated on the theory of connectivism, in which learning is not limited to the mind (Corbett *et al.*, 2020). For knowledgeable and competent citizens in a digital society, this theory requires learners to be connected by utilizing networks through electronic media, such as smartphones, laptops, and others. This theory argues that learning processes and goals in an interdependent and hyperconnected world are different from pre-digital learning systems (Foroughi, 2015) because today's learning is highly networked, connected, collaborative, and participatory (Tham *et al.*, 2021). According to connectivism's view, education aims to connect students with sources of information carefully and effectively. Students can continue to use networks to solve problems. Furthermore, it is believed that technology can increase educational opportunities and effectively connect students with sustainable sources of information (Miranda *et al.*, 2021). In addition, this study also focused on the PICRAT model, which is a model of technology integration into education that emphasizes the relationship between students and technology passively, interactively, and creatively (PIC) or replacement, amplification, or transformation (RAT), that may impact learning strategies (Kimmons *et al.*, 2020).

Results and Discussion

1) Concepts and Challenges of Effective Teaching Models in Virtual Classrooms

During the pre- or post-Covid-19 pandemic period, educational institutions have many problems with knowledge, human resources, teaching models, and educational technology. In this context, the teachers are the hope and the solution for it all. Thus, teaching models and critical examination are important issues for educational institutions and society in general (Skantz-Åberg *et al.*, 2022). Many studies have shown the importance of theorizing, conceptualizing, and applying teaching models in educational institutions for the transformation of humans, especially students, in a better direction (Leiber, 2022). Referring to micro-level communication, a concept in modern education refers to teaching that includes a space of interaction between students and teachers, while at the macro-level, communication occurs between students who are members of social groups, schools, religious organizations, and so on (Amrullah, 2022). In addition, many educational theories have been developed to address problems not only at the level of internal conflict between teachers and students that exist at the micro-level but also at the macro-level communication (Tesar *et al.*, 2022).

Several studies mention educational reforms imposed by post-socialist countries (Zounek *et al.*, 2022; Szpytma & Szpytma, 2022). Studies on educational innovation, student-centered learning approach, strategies for spreading and expanding knowledge, standards for assessing student performance, and others continue to represent the Western model of learning standards. Curriculum, evaluation, and educational procedures create an understanding of pedagogy, both structural and conventional understanding. Simultaneously, the modernist point of view emphasizes clear boundaries and appropriate formal design. However, for both students and teachers, the paradigm in pedagogical understanding has shifted significantly towards e-learning. In this context, especially in developing countries, technology in education is pioneering new instructional methods to improve the learning and teaching processes. However, the presence of technology in educational institutions requires highly knowledgeable people who generally work in technical institutions rather than state-owned schools or universities (Idris *et al.*, 2020). In fact, those who are competent in technology must be prioritized to be teachers or educational staff for the sake of lifelong learning in higher education and for stimulating the use of technology in learning communication (González-pérez *et al.*, 2022). Furthermore, liberation pedagogy must be put



forward as a kind of critical pedagogy that concentrates on students who are marginalized in school, such as those who experience caste discrimination and so on. In practice, such pedagogy and investigation are so rare. Therefore, inclusive pedagogy is far more pervasive in theory than in practice.

Many studies suggest that placing too much focus on curriculum and standardized tests can sometimes pressure teachers to compromise on the uniqueness of individual student problems. A teacher may be willing to focus on students' social issues, which are often caused by tradition or an imbalance of power, but they may fear that doing so will jeopardize their position in the classroom. Many research findings have revealed that students receive great advantages from teachers who are given autonomy in teaching. This teacher autonomy relates to the flexibility to rearrange educational curricula that are considered rigid (Hammersley-Fletcher *et al.*, 2021; Bakken, 2019). This arrangement undoubtedly can only be completed after going through the process of reading references, knowing the condition of students, and selecting appropriate teaching methods, all of which are to overcome social problems faced by students in education.

2) Students' Perspectives on the Positive and Negative Aspects of E-Learning

Educational institutions ranging from elementary schools to universities were forced to close for maintaining social distance and implementing health protocols due to the Covid-19 pandemic. This reduces the scope of students for traditional (face-to-face) learning. The Covid-19 pandemic has forced all forms of government, be it democracy or monarchy, to restrict the use of traditional classroom facilities and physical movement. In this situation, teachers must choose to utilize technology to create online learning resources in educational institutions. Many studies have found that education provided through e-learning has a positive impact on students' physical, emotional, and brain abilities (Al-Sayid & Kirkil, 2022; Du *et al.*, 2022). However, some other studies also reveal negative aspects of e-learning (Rakhimov *et al.*, 2022).

Based on students' perspectives, e-learning provides several positive impacts. First, it is regarding the interest in the material and practicality of the lesson. At this point, they emphasize their desire to try a modern education model, which inevitably, during the Covid-19 pandemic, e-learning has become a must. Second, students' technological knowledge of computer-based courses and technical applications attracts them to online learning (Vodovozov *et al.*, 2022). Third, students can easily adjust their study schedule, anytime and anywhere, including accessing various online resources. Fourth, with face-to-face interactivity and colorful graphics, time-saving PowerPoint slide presentations may keep content alive. Fifth, the learning process in e-learning encourages the promotion of interdisciplinary and multimodal educational settings. In addition, e-learning helps eliminate harsh judgments about educational concepts, techniques, and training during the days of the Covid-19 pandemic. Sixth, online learning makes characteristics and ideas simpler, in which students from various directions have been acculturated due to cross-border and cultural engagement (Meng *et al.*, 2022). Seventh, fundamental changes have undergone significant modifications related to educational paradigms, classification systems, human thinking, English communication, and recording. Furthermore, theory, pedagogical design, and technology have all been combined in online education. While the theoretical perspective provides a framework, pedagogical design shapes action with the help of technology.

In addition to the positive impact, the rapid transformation of learning from offline to online has caused negative effects. First, not all students have access to the internet to use learning platforms, such as Google Meet, Zoom, and others (Siddiqui & Ahmad, 2022).



Moreover, teachers are not ready or have no experience to teach online. According to the authors, the challenge of education during this pandemic is to make education accessible and inexpensive with the availability of skilled teachers. Second, physical isolation due to the Covid-19 pandemic creates isolation and a lack of direct communication between teachers and students, which affects the mentality of students in the form of loneliness in the online learning system. Third, all internet platforms often create problems that can interfere with the delivery and learning content. In addition, technical problems may interfere with the quality of interactions between students and students or students and teachers, which may result in a lack of feedback between them (Fung, 2022). Likewise, in universities, there is a lack of interaction between students, faculty members, and academic staff. In the communication process, this is the reason students lack emotional intelligence because of the disconnection between them. Fourth, students often engage in cheating and unethical practices during online exams by easily copying text from Google materials (Golden & Kohlbeck, 2020) so that the score they gain in the exams is impure, which in turn makes it difficult for teachers in the evaluation process. Fifth, sitting statically and studying in front of a computer may cause health risks. In this context, Eldho & Muthukumar (2022) propose an ergonomic setting, namely the process of making the work/study environment more efficient by reducing human fatigue and anxiety while maximizing safety.

3) Making Online Learning Effective during the Covid-19 Pandemic

Distance learning or online learning, according to the authors, should focus on instructional strategies. This is supported by a study conducted by Mahmood (2021) which suggests several important points in the distance learning process. First, the active involvement of a teacher in delivering material in online classes – including group communication, listening more to students, and making eye contact with students – is an important point as described in a study conducted by Zohrabi & Farshbafan (2022). Second, in developing blended learning that is student-centered and minimizes student dependence on teachers, teaching techniques are highly needed that must be in line with the interests, level of knowledge, abilities, and understanding of students. In this context, McKenzie *et al.* (2022) state that teachers can assist in developing technology, time management, and other skills, which are necessary for the learning process. Third, it is to provide infrastructure. Students in developing countries, in addition to not understanding the technology, do not have sophisticated technological gadgets. Therefore, access to laptops and smartphones is very difficult to realize. The synergy between educational institutions, telecommunications experts, technical support, and efficient connectivity is needed to ensure equitable distribution of resources. A study conducted by Aduba *et al.* (2022) reveals that social media platforms may make the teaching and learning processes more interactive, participatory, and collaborative for all students. Fourth, learning materials must provide innovation, encourage creativity, and improve technology services. This in turn can form an analytical mindset and increase students' creativity (Tang *et al.*, 2022). Preliminary information about assignments (pre-class content) sent via email and others may give students ideas and brief knowledge of the subject matter. In addition, the teacher can provide notes or comments on the information. Fifth, teaching and assessment techniques need to be formulated properly. This is because students feel that assessment policies and techniques are less agile, making them need more time to access assignments and exams without extra support and time due to technology.

During the Covid-19 pandemic, human mobility is reduced or restricted due to quarantine and isolation. It disturbs the minds and emotions of students. Meanwhile, good physical and mental states are important things for them. Therefore, the teachers have an



additional duty to encourage them to be cheerful during the pandemic and must pay attention to students' mental health in giving assignments. Students' concentration can be increased by giving assignments with appropriate teaching strategies (Muthuprasad *et al.*, 2021).

Conclusion

Based on the points described in the results-and-discussion section, during the Covid-19 pandemic, there has been a shift in trend from offline to online education, added by a shift in the mindset of students, such as how to register, choose subjects, and evaluate themselves as if they are not supervised. In many developed countries, online learning has proven to be beneficial because it is supported by adequate human resources and infrastructure, such as the availability of qualified teaching staff and e-learning platforms. As a result, shifting an offline education system to an online one may result in advantages, such as independence from time and location boundaries, interactivity, quality management, and flexibility. In contrast to developing countries, the lack of human resources and infrastructure (e.g., experienced teachers, funds, and access to technology) are current challenges faced by many students in these countries. This has had a lasting effect on their social and psychological lives.

Therefore, educational institutions must divide their responsibilities into curriculum development, improvement of teaching strategies and methods, improvement of technological infrastructure, and preparation of competent human resources. Even so, online learning during the Covid-19 pandemic has been shown to reduce the number of virus transmissions and is beneficial for the health of students and teachers. This study concludes that online learning and the dynamics of education reform still serve as a model for future educational development, especially for facing a pandemic. The significant contribution of this study is the findings regarding the potential of technology and the barriers that students face while learning due to digital mechanisms.

Recommendation

For recommendations, further research needs to be carried out, especially evaluating the efficiency of unstructured types of professional development, such as tutoring and short online tutorials to streamline and improve teaching practices in the context of online learning. Further researchers also need to comprehensively study the appropriate teaching strategies to increase student engagement, persistence, and performance in online education. For policymakers, reforming online education is very important and influential in teaching and learning through virtual platforms. For teachers, in-service and training programs are important to instill new approaches, strategies, and methods in the classroom, especially in virtual classrooms. Furthermore, teachers need to consolidate learning interactions as the core for planning, designing, and delivering online learning.

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