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Online learning during the Covid-19 Pandemic: A review of literature

التعليم عن بعد أثناء جائحة كورونا: مراجعة أدبية

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Abstract

During the Covid-19 pandemic, schools all over the world changed from in-class learning to online learning. Accordingly, it is important to review and explore the studies conducted in online learning for better implementation and adaptation. The current review is a systematic assessment of the studies done from the point of view of teachers and students concerning the use of online learning during the Covid-19 pandemic. Three scientific database browsers were used to locate the related papers, and thirty studies were selected to be reviewed for this report. The studies were analyzed based on several variables under three thematic categories: teacher views, student views, and the outlooks of both teachers and students. The results revealed different opinions on using online learning during the pandemic. Several advantages and challenges were recorded from the views of teachers and students. Recommendations and future research are discussed.

Keywords: online learning, Covid-19 pandemic, teachers' views, students' views.

Introduction

The concept of online learning has attracted immense attention in recent times as a result of the increasing acknowledgment of its importance and prevalence in contemporary society. Indeed, it is well acknowledged that online learning has primarily developed with the backdrop of advanced digital technology and its increasing penetration and adoption in almost every aspect of contemporary life. At its most basic, online learning encompasses a mode of learning undertaken via virtual learning environments with the active utilization of digital devices (Rivera-Vargas et al., 2021). According to

المخلص
خلال جائحة كورونا (Covid-19)، تحولت أنظمة المدارس في جميع أنحاء العالم من التعليم التقليدي إلى التعليم عن بعد. وأصبح هناك أهمية للكشف عن الدراسات التي أجريت في التعليم عن بعد لمعرفة كيفية تنفيذ العملية التعليمية و تكيفها أثناء جائحة كورونا (Covid-19). هدفت هذه الدراسة لتقييم العملية التعليمية من وجهة نظر الكادر التدريسي و الطلبة. استخدمت هذه الدراسة ثلاثة متصفحات (قواعد بيانات) لتحديد الأوراق ذات العلاقة لهذه الدراسة. وبناء على ذلك، تم اختيار ثلاثين دراسة علمية لمراجعتها بناء على ثلاثة متغيرات وهي آراء الكادر التدريسي و آراء الطلبة و آراء الطلبة و الكادر التدريسي أثناء جائحة كورونا عبر استخدام التعليم عن بعد. توصلت هذه الدراسة إلى عدة نتائج و آراء حول استخدام التعليم عن بعد أثناء جائحة كورونا، و كشفت أيضا عن عدة مزايا و تحديات من وجهة نظر الكادر التدريسي و الطلبة، و ناقشت الدراسة عدة توصيات و دراسات مستقبلية.

الكلمات المفتاحية: التعلم عن بعد، جائحة كورونا، آراء الكادر التدريسي، آراء الطلبة.

Rivera-Vargas et al. (2021), the advent and consolidation of online learning have to be comprehended not only as to the evolution of conventional distance learning but also as a modality that has the capacity to handle the new and formative demands pertaining to a technologically-infused world as well as a networked and connected society. It may be acknowledged that online learning has developed organically from distance learning, which underlines learning activities that occur in instances where there exists a physical separation between learner and instructor. Previously, such

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learning used to involve communicating through audio and teleconferences, video and audio recordings, and multimedia systems as well as written correspondence. Online learning involves the same concept, with communication being undertaken via the worldwide web. In this case, online learning involves distance learning where learning occurs via computers and the internet (Yeşiloğlu et al., 2021).

Purpose of study

The main purpose of the study is to provide a literature review of the understanding of how online learning worked during the Covid-19 pandemic, based on the views of teachers and students and how those views have developed during the Covid-19 pandemic. This study shows a variation in carefully selected studies done during the Covid-19 pandemic, with different study implications. Moreover, this study investigates the variation of the methodologies used by researchers who examined and explored online learning during the Covid-19 pandemic. It is important to provide a clear view of teachers' and students' views concerning online learning during the pandemic. Lastly, the results of the study will discuss the findings of the selected studies and provide more in-depth conclusions.

Theoretical Framework or Literature Review

Advantages and Disadvantages of Online Learning

The increased penetration and popularity of online learning have been predicated on the varying advantages that it encompasses. Key among these is the capacity to access opportunities for learning irrespective of the geographical limitations of individuals. According to Rivera-Vargas et al. (2021), online education encompasses an inclusive educational modality that would facilitate and enable access to higher education as well as the development of digital competency. Indeed, active utilization of digital and electronic devices in online education could potentially facilitate the development, access, and enhancement of the quality of education. This is complemented by its capacity to offer and standardize digital and technological competencies of the students that utilize the same virtual environment, an element that would eliminate the potential digital divide across multiple intersectional dimensions such as age, geographical location, social class, gender, and physical abilities.

On the same note, online learning has enhanced efficiency in access to learning opportunities.

According to Yusnilita (2020), online learning offers an excellent technique for material delivery that is not limited by location or time, allowing for accessibility to instructions from anywhere, in any time zone. This means that learners can conveniently fit education into their busy lives via online learning.

Further, online learning is known to be immensely effective in the education of students, enhancement of professional development, and cost-effectiveness in combating the increasing expense of post-secondary education, as well as potentially offering world-class education to any person with a broadband connection. Indeed, e-learning is considerably cheaper compared to conventional learning since it would not need paper or pencil. Also, logistical costs would be completely eliminated since learning can occur at any time and place (Yusnilita, 2020). The basic implication is that the learners are provided with more flexibility, customization, and personalization since the training material would not be selected by the teacher. Rather, the students have the chance to obtain their own knowledge requirements.

However, some scholars have noted that online learning is plagued by reliability issues, particularly given the disparity pertaining to access to the requisite technology. According to Adnan and Anwar (2020), online learning may be effective in countries that are digitally advanced, but the lack of access to affordable, reliable, and fast internet connection stands in the way of online learning, particularly in the case of individuals who live in rural and marginalized communities. This may worsen disparities, as students who access the internet via smartphones would be incapable of taking advantage of online learning, since a large proportion of online content would not be accessible through smartphones (Adnan & Anwar, 2020).

In addition, online education comes with the challenge of maintaining the motivation of learners. According to Erumit (2021), online learning comes with a difficulty in maintaining the high levels of engagement and motivation that have been a dominant feature in face-to-face classrooms. This may be predicated on the fact that online learning does not allow for enhanced interaction or even practical lessons. Of course, online learning is still in its infancy, with different learning platforms being developed, which will incorporate more features to allow for enhanced engagement. As other scholars have noted, other platforms such as Zoom are allowing enhanced interaction between the learners and

the teachers, where the students can inform the teacher in cases where they are confused, might want a change in pace or need to ask a question.

The Role of Educational Institutions in Transforming to Online Learning

As much as online learning confers immense responsibility to the learners, as far as active learning is concerned, it is noteworthy that educational institutions have a key role to play in safeguarding an effective shift to online learning. Key among the roles is the utilization of effective and efficient technology that would enhance learning for the students. Presently, educators have put in place various online synchronous meeting technologies that assist or enhance student comprehension, the most common being Zoom. Zoom has varying features such as breakout rooms, annotation tools, and screen and video sharing, among other functions, that foster communicative language learning in collaborative synchronous classes through the use of authentic language instruction. Memis (2021) notes that in the course of face-to-face classes, educators strive to obtain paralinguistic clues that would measure the interest, commitment, and comprehension of the students. Zoom has gained popularity as a result of its capacity to enable students to utilize non-verbal icons to indicate their approval and disapproval, need for a break, desire to slow down or speed up, and even their questions. The symbols offer crucial data pertaining to the agreement, attentiveness, enthusiasm, and confusion of the students, with language content being addressed. This is complemented by the prospects of Zoom allowing educators to enhance the engagement of the students, especially in the course of longer live online sessions, through the incorporation of surveys and polls that can ensure that the students are actively engaged in the classroom activities.

In addition, learning institutions must ensure that the selected online learning platforms are easy to use. It is noteworthy that a large number of students and educational institutions have just recently shifted to online learning as a result of the increased shutdown of educational institutions by the Covid-19 pandemic. This means that a large proportion of them are bound to be apprehensive about using new technology. The incorporation of ease of use would be fundamental in enhancing the adoption of the technology and safeguarding the capacity of both the students and the educators to collaborate more in the course of the learning sessions, thereby enhancing engagement in the long term

and the short term. Ease of use would particularly involve eliminating the challenges that come with the deficiency of technological abilities of the educators and students alike, as well as the connection problems that both students and teachers are bound to face at any time. Of course, other challenges might involve the cost of equipment required for online learning. As much as this is recognized as one of the least problems in the case of online learning, particularly given that digital technology has penetrated a wide range of places and become increasingly cheaper and affordable, it still remains a major hindrance (Epaminonda et al., 2021).

On the same note, educational institutions must ensure that there is a careful balance between the adoption of technology and the interests of the different stakeholders. It may be acknowledged that the adoption of online learning in the current context may have occurred too quickly, to the extent that educational institutions did not have the time to consult or even consider the interests of the students themselves or even their capacity (intellectual and technical) to access the lessons. According to Sahbaz (2020), students have demonstrated immense opposition to the concept of online learning and would be unlikely to choose it if they are granted the choice. During the Covid-19 pandemic, both instructors and students were caught unaware by the sudden onset of lockdown, with a large number of institutions having neither the appropriate materials nor sufficient materials to safeguard the effective transmission of education. Prior to the implementation of any distance learning program, it is imperative that educational institutions strive to safeguard the pedagogical, institutional, personal, technological, and instructional readiness of the stakeholders. This would come in handy in safeguarding the success of the program in the long term and the short term.

It should be acknowledged that a large proportion of negative attitudes toward online learning among students is primarily predicated on the lack of sufficient learning resources. Indeed, students have often underlined the fact that online learning is plagued by certain challenges, including the lack of technological wherewithal and skills as well as the insufficiency of learning materials, lack of internet, and other factors. As noted in Al-Salman & Haider (2021), the implementation of online learning should not be done in a haphazard manner. Rather, it is imperative that educational institutions strive to enhance the capacity of the students and the

instructors to undertake and participate in online learning sessions.

Methodology

The study followed the literature review research process, and the data was collected by retrieving research papers from three credible online databases (IEEE, ProQuest, and Springer). This research was conducted and published during the Covid-19 pandemic between March 2019 and December 2021. The selected papers in this study were chosen through variant keywords in the search engine in the three databases, using "Covid-19 pandemic and students' views and online learning" and "Covid-19 pandemic and teachers' views and online learning" to find

studies related to the topic. The total number of papers found in the three databases was 120, and all abstracts were reviewed to make sure that the papers were related to the purpose of this study. There were 28 of the papers from the three databases selected for the review. Table 1 shows the final summary of the results. According to the study design, there were three types of methods used in the papers: the Quantitative Method (n=11; 39.29%), Qualitative Method (n=10; 35.71), and Mixed Method (n=7; 25%). In addition to that, 14 papers were a discussion of teachers' views (50%), 11 papers were a discussion of students' views (39.29%), and 3 papers were a discussion of teacher and student views (10.71%).

Table 1.
Overview of the Papers.

	Authors	Study design	Teachers' views	Students' views
1	Gkamas, Paraskevas & Varvarigos (2019)	Quantitative Method	X	
2	Marčinković, Aberšek & Pesek (2021)	Quantitative Method	X	
3	Mailizar, Abdulsalam & Suci (2020)	Quantitative Method	X	
4	Hakami & Hernandez-Leo (2021)	Quantitative Method	X	
5	Kundu & Bej (2021)	Mixed Method	X	
6	Yeşiloğlu, Gençer, Ekici & Isik (2021)	Mixed Method	X	
7	Memis (2021)	Mixed Method	X	
8	Karakaya, Adigüzel, Üçüncü, G., Çimen & Yilmaz (2020)	Qualitative Method	X	
9	Goodarzi, Weisi & Yousofi (2020)	Quantitative Method	X	
10	Aksela & Haatainen (2019)	Qualitative Method	X	
11	Gerard, Wiley, Debarger, Bichler, Bradford & Linn (2021)	Qualitative Method	X	
12	Kaimara, Fokides, Oikonomou & Deliyannis (2021)	Mixed Mothed	X	
13	An, Kaplan-Rakowski, Yang, Conan, Kinard & Daughrity (2021)	Mixed Mothed	X	
14	Erumit (2021)	Mixed Mothed	X	
15	Zeichner (2021)	Qualitative Method	X	
16	Aytaç (2021)	Qualitative Method	X	
17	Durak & Çankaya (2020)	Qualitative Method		X
18	Epaminonda, Efthymiou & Ktoridou (2021)	Quantitative Method		X
19	Cook-Chennault & Villanueva (2020)	Mixed Mothed		X
20	Munir, Erlinda & Afrinursalim (2021)	Quantitative Method		X
21	Sahbaz (2020)	Qualitative Method		X
22	Ocak & Karakus (2021)	Mixed Mothed		X
23	Al-Salman & Haider (2021)	Quantitative Method		X
24	Yusnilita (2020)	Qualitative Method		X
25	Babayiğit, Cizrelioğullari & Altun (2020)	Quantitative Method		X
26	Adnan & Anwar (2020)	Quantitative Method		X
27	Rivera-Vargas, Anderson & Cano (2021)	Mixed Mothed		X
28	Setiani, Aditya, Wijayanto & Wijaya (2020)	Quantitative Method	X	X
29	Qazi, Hardaker, Ahmad, Darwich, Maitama & Dayani (2021)	Qualitative Method	X	X
30	Raes (2022)	Mixed Mothed	X	X

Results

This study analyzed published papers from three databases (IEEE, ProQuest, and Springer) and all of these papers were published between March 2019 and December 2021. Moreover, the majority of papers (17) were published in 2021, while (10) papers were published in 2020, (2) papers were published in 2019, and (1) paper was published in 2022. The majority of papers (7) were published in Turkey, while Indonesia

had (4) papers, the USA had (3) papers, and Greece had (2) papers. One paper came from each of the following countries: Slovenia, Saudi Arabia, India, Iran, Finland, Cyprus, Bosnia and Herzegovina, Jordan, Pakistan, Spain, and Belgium. Categorized according to the type of institutions, (15) papers were applied in universities, while (12) were applied in schools and one paper is considered a review paper (see table 2).

Table 2.
Basic information about studies.

<i>Year of Publication</i>	N	Percentages
2019	2	6.7
2020	10	33.3
2021	17	56.7
2022	1	3.3
	30	100
<i>Country</i>	N	Percentages
Turkey	8	26.7
Indonesia	4	13.3
USA	3	10
Greek	2	6.7
Slovenia	1	3.3
Saudi Arabia	1	3.3
India	1	3.3
Iran	1	3.3
Finland	1	3.3
Cyprus	1	3.3
Bosnia and Herzegovina	1	3.3
Jordan	1	3.3
Pakistan	1	3.3
Palestine	1	3.3
Spain	1	3.3
Belgium	1	3.3
Review Paper	1	3.3
	30	100
<i>Type Of Institutions</i>	N	Percentages
Schools	14	46.7
Universities	15	50
Review Paper	1	3.3
	30	100

Table 3 shows the publications of studies (databases). The study was collected from three databases. IEEE is considered the most-sourced database, with 11 papers (39.29%), while

ProQuest came in second with ten papers (35.71%) and the fewest (7 papers) were sourced through Springer (25%).

Table 3.
Publications of The Studies.

	N	Percentage
IEEE	11	36.7
ProQuest	11	36.7
Springer	8	26.7
	30	100

Teachers' Views

Volumes of literary works have been written examining the concept of online learning with a view toward gaining more insight into its efficiency in the implementation of online learning and the hindrances that have hampered the attainment of the same. One of the most important elements that should be examined is the multiplicity of barriers to online learning. In "Secondary School Mathematics Teachers' Views on E-learning Implementation Barriers during the COVID-19 Pandemic: The Case of Indonesia," Mailizar et al. (2020), explored the perceptions of secondary school mathematics teachers on e-learning implementation barriers in the course of the pandemic. The four barrier levels that are thus examined include teacher, school, curriculum, and student, with the study also examining the relationship between the levels of barriers and the demographic background of the teachers. It was determined that the student-level barriers were the most impactful to e-learning utilization. Further, student-level barriers demonstrated a strong positive correlation with the school-level barrier and curriculum-level barrier, with the teachers' backgrounds having no effect on the barrier levels. The student-level barriers included insufficiency of skills and knowledge, as well as devices for use in e-learning, lack of interest, internet connection, and inability to access the e-learning system. This underlines the need for policymakers, especially learning institutions, to create comprehensive strategies that would prepare the students for the use of e-learning. These could include the provision of students with vouchers for internet connection alongside incremental training on the utilization of e-learning prior to the implementation of the same, to safeguard proactive student engagement.

However, the implementation of online learning has been facing numerous hurdles. In "We have efficacy but lack infrastructure: teachers' views on online teaching learning during COVID-19," Kundu & Bej (2021) sought to examine the perceptions of the teachers regarding the change

from offline to online learning. As much as the teachers perceived their efficacy in online learning to be considerably pronounced, they complained about the lack of infrastructure to safeguard efficiency. In cases where there was a prevalence of good efficacy, there were minimum concerns pertaining to infrastructure. In essence, their attitudes demonstrated the least concern for the things that they do not have and more concern with the things that they could do with the resources that they do have at their disposal. Perhaps most noteworthy is the fact that teachers would not be perceived as entirely homogenous as far as their readiness to take up online learning is concerned. Indeed, different groups of teachers exist in the contemporary learning environment, in which case it is imperative that educational institutions strive to customize their implementation procedures to their distinctive circumstances. This might involve including the teachers and students in the implementation processes and ensuring that they seek their opinions prior to the implementation process. Further, the provision of sufficient training may be imperative in the contemporary learning environment to safeguard their preparedness.

Marčinković et al. (2021), on the other hand, examined the acceptance of MS Teams by teachers during the Covid-19 pandemic. It was determined that technology use in remote teaching would be negatively affected by limited internet access and the low digital competency of families. However, it was positively affected by school experience in virtual environments, communication, school organization, and professional teacher education. In addition, Gkamas et al. (2019) examined the challenges faced in the course of online learning using BYOD (Bring Your Own Devices) policies. These included insufficient infrastructural resources as well as a lack of human resources. Even more noteworthy is the challenge of security, clear definition of a regulatory framework for allowing students to use their devices, and acceptable use policy.

Hakami & Hernandez-Leo (2021), on the other hand, underline the importance of a careful selection of the system that is used in online learning. In the study, most of the users stressed the fact that their system enhanced their work productivity and job satisfaction, while also safeguarding their wellbeing. Similar sentiments are made by Zeichner (2021), who examined the attitudes of teachers on ICT and the differences in their attitudes in different schools with varying levels of experience. Veteran schools that have more than four years of experience in ICT programs registered more positive teacher attitudes. Aksela & Haatainen (2019), however, acknowledged the importance of teachers' capacity to implement project-based learning and its impact on effective learning. It affects the content comprehension of the students and their skills development. In the study, PBL was found to be important as it fosters teacher or student motivation and learning, student-centered learning, collaboration, and a sense of community, as well as versatility.

Karakaya et al. (2020), on the other hand, noted that the pandemic did not only affect the health systems of countries but also their education systems. In this case, they examined the views of the teachers regarding the effects of the Covid-19 pandemic on the education process in Turkey. In spite of the concerns that they have regarding the economy, health, and education, it was determined that the pandemic process offers positive acquisitions in skill development, awareness, and utilization of technology.

Gerard et al., (2021) noted that while online learning may be a good alternative, its introduction in the Covid-19 period was haphazard, as most teachers did not have the requisite knowledge and experience to direct the students. However, they have shown longevity in enhancing performance through exploiting the logged student work and creating class discussions. Further, they facilitated students' utilization of interactive models and activities to test conjectures regarding science, as well as guided students on iteratively refining their explanations on the basis of evidence. Online learning also came with sufficient time for self-direction. Similarly, Kaimara et al. (2021) examined the preservice teachers' perceptions on barriers to DGB (digital game learning) implementation. Inefficient resource allocation was cited as a major obstacle, as it hampers the provision of updated devices, equipment, and software, as well as the professional training of teachers, policymakers, and administrators. The obstacle may be surmounted through the use of

easy-to-use and affordable gadgets, which means that only political will is required.

An et al. (2021) reiterated the fact that early online learning was plagued by different problems. These included decreased engagement and participation of the students, lack of access to technology, and concerns regarding their wellbeing, not to mention the decreased work-life balance. The dominant themes that came up included redefinition of the normal, increased blended learning, and uncertainty concerns regarding the new normal, as well as social distancing and hygiene. However, it is noteworthy that the implementation of online learning may not necessarily be applicable for all subjects. In "Examining Pre-Service Teachers' Views about Online Chemistry Laboratory Learning Experiences Amid the Covid-19 Pandemic", Yeşiloğlu et al., (2021) explored the implementation of online learning in chemical laboratory classes and the experiences of the teachers on the same in the course of the Covid-19 pandemic. Key among the advantages of online chemical laboratory learning is the replay capability and the fact that it allows for utilization of technology, enhanced laboratory safety, and the potential for saving laboratory materials and time. Further, it allows for enhanced utilization of technology, which is bound to enhance the efficiency of both the students and the lecturers in the long term and the short term. However, it should be acknowledged that online chemical laboratories imbue a challenge to "learning by doing." This is particularly true given the fact that the students would be incapable of undertaking practical experiments; rather, they would be bombarded with theories or theoretical components of the lecturer. The lack of practical experiments affects the permanency of learning and even the identification of laboratory materials and chemicals. Even more noteworthy is the fact that the students may not always have the capacity to communicate with the instructor. The basic implication is that the application of online learning on courses that require practical skills may not be appropriate in its current structure.

Memis (2021), on the other hand, acknowledged that the implementation of online learning involved different online platforms, key among which is Zoom, a type of synchronous meeting technology (SMT). The author aimed at examining and evaluating the views of teachers on the utilization of Zoom in distance learning. It is acknowledged that one of the major hindrances or downsides of online learning is the potential for properly assessing the capabilities of the

students and their engagement in the class. However, Zoom offers students two fundamental functions that would allow for the maintenance of control of the class. Key among them is the attention tracker, where a clock indicator is merged on the attendee panel next to the name of the participant in the event that Zoom is not the program displayed on the participant's screen for over 30 seconds. Further, there is the Attention score, which offers a rundown of the tracker operation in the meeting papers. This means that the participants would be assigned a score on the basis of the time that they spent in Zoom. Perhaps most noteworthy is the capacity of the teachers to enhance the level of engagement of the students through elements such as surveys and polls that may be employed in engaging students and collecting ideas, responses, and perceptions. It may be acknowledged that online learning involves quite a wide range of digital platforms from which educational institutions and instructors can choose. Indeed, there is no universally accepted digital platform that would be appropriate for every other educational institution. This means that to enhance the efficiency of online learning, every educational institution must undertake a careful analysis of its structures and strive to customize its digital platforms to the needs and experiences of the teachers and students.

Similarly, Aytaç (2021) sought to explore the perspectives of teachers on the impact of the pandemic on the education processes in Turkey. It may be acknowledged that the advent of the pandemic not only affected healthcare systems, but also education systems where schools were closed and had to revert to online learning. There are different elements that cause negative perceptions of teachers regarding online education. It is noteworthy that teachers had negative perceptions of competency pertaining to economic losses, deficiencies in education, and feelings of uncertainty. Further, they had negative views pertaining to poor interactions, technological infrastructure, and unproductivity, not to mention the deficiency of teacher competencies with regard to distance education. The efficiency of online learning systems necessitates strong pedagogical competencies, equipped backgrounds, and the attitudes of the teachers. Further, it is imperative that communication between learners and their instructors is strong, with the systems providing effective feedback. In spite of the challenges pertaining to online learning, it is noteworthy for enhanced efficiency of technology and the potential for enhanced participation of students in the learning processes.

Goodarzi et al. (2020) noted the uncertainty and new experience that came with shifting from face-to-face learning to compulsory online learning in the course of the Covid-19 pandemic. It may be acknowledged that the burden of enhancing the efficiency of the shift fell primarily on the teachers, particularly given the fact that they have previously been the most active players in the learning process. Of particular note is the fact that the challenge of online learning is primarily felt since this was an entirely new environment to which students had been introduced. Unfortunately, the pandemic did not allow much time for the teachers and students to sufficiently prepare for the introduction of online learning; rather, they were simply immersed in the new system within a considerably short time. Since much of the world may currently be adjusting to the new normal and returning to its earlier ways of life, it is noteworthy that online learning is bound to be a more permanent fixture either on its own or as a component of blended learning. Nevertheless, educational institutions have an opportunity to customize learning platforms to their distinctive needs, as well as enhance the preparation of their stakeholders to encourage more uptake of online learning and improve engagement in the long term and the short term.

Student's Views

In "Students' Views on the Use of WhatsApp during Covid-19 Pandemic: A Study at IAIN Batusangkar," Munir et al. (2021) aimed at examining the perceptions of the students on the utilization of WhatsApp in English Teaching Department classes in the course of the pandemic. The continued spread of the pandemic has caused extended and increased utilization of online media and online learning, lasting longer than previously expected. Using qualitative research involving 270 students subjected to open-ended and close-ended questionnaires, it was determined that the student's perception of the utilization of WhatsApp during the pandemic was largely positive. The online platform was shown to be effective in assisting students to get enthusiastically involved in learning activities, particularly given the platform's capacity to safeguard assessment and evaluation benchmarks, its sharing of material and information, the undertaking of group discussions, and an increasing literation.

On the same note, Babayiğit et al. (2020) examined the practical implications of online learning on students and the opinions of students regarding its use. It is noteworthy that students

who had positive attitudes regarding online learning felt more secure and relaxed. This may be a result of their continued use of online learning facilities compared to those who felt negatively about the same. Similarly, Sahbaz (2020) noted that the Covid-19 pandemic affected learning processes for more than 1.5 billion students across the globe. In “Views and Evaluations of University Students about Distance Education During the COVID-19 Pandemic”, Sahbaz (2020) noted that online learning has become the new normal as populations across the globe strive to minimize the magnitude of impact that the pandemic has had on their lives. In the study, the author aimed at examining the assessments and perceptions of university students toward distance learning in general. Using a questionnaire incorporating 12 open-ended questions in the collection of data, and analyzing the same via conventional content analysis, distance learning was viewed unfavorably by 90% of the respondents. This was predicated on the notion that it was monotonous, an element that eliminated the motivation and enjoyment that is supposed to come with learning and teaching. Of course, these results may have been limited to language learning and might not have included other subjects. Even more noteworthy is the fact that the opposition to distance learning may be emanating from the stressful and unusual atmosphere pertaining to the pandemic period, where the suddenly imposed lockdown process may have subjected the student to undue stress levels. Indeed, it may be acknowledged that the online lessons may not have faced significant opposition if they had occurred during the normal flow of the students’ academic lives.

Further, Epaminonda et al. (2021) examined the experiences of students following the change to online learning due to the Covid-19 contingency plan. They indicated that as much as students still enjoy some elements of online learning, they still perceive face-to-face learning as superior.

Yusnilita (2020) complemented these findings by examining the manner in which online learning brought about the impact on student attainment. It is noteworthy that online learning was found to enhance the students’ confidence. Further, it offered them a practical and flexible manner of learning while also enhancing their activity and creativity.

On the same note, Adnan and Anwar (2020) explored the attitudes of higher education students regarding mandatory distance and digital learning university courses in the course

of the Covid-19 pandemic. The study determined that the applicability of online learning in underdeveloped countries may not generate the necessary results since most students are incapable of accessing the internet as a result of technical and financial issues. The deficiency of face-to-face interaction with instructors, coupled with the absence of conventional classroom socialization and the response time, has a negative impact.

In addition, Rivera-Vargas et al. (2021) examined the experiences of students as well as the manner in which they adapted to the online learning educational model. The findings of the study indicate that there are positive assessments pertaining to the adoption and integration of technological competencies. Further, online education is a responsive model to the emerging needs of learners. The main concerns of students are the institutional and pedagogical support that is offered.

Cook-Chennault & Villanueva (2020) explored the use of online learning on technical courses. Their focus was on perceptions and experiences of sophomore and freshman engineering students when playing serious online engineering games designed to enhance engineering intuition as well as a knowledge of statics. In spite of earlier contentions pertaining to the use of online learning in technical courses, it is acknowledged that the utilization of serious educational engineering games has been on the rise in engineering education, with the aim of assisting students to enhance their technical competencies in the engineering discipline. In the study, it was determined that the design of the engineering software, coupled with the manner in which it is integrated into course grading and assessment of the learning outcomes, would have a bearing on the students’ perceptions of the acceptance, ease of use, and usefulness of the technology as a learning tool. However, this does not undermine the fact that online learning is supposed to safeguard enhanced learning and education of the students. It is noteworthy that the acceptance of inquiry-based education games within a classroom of diverse populations of students is supposed to clearly articulate and link up the objectives of the game to the class curriculum content. On the same note, the authors reiterate the need for enhanced engagement in safeguarding the motivation of the students. This necessitates the incorporation of a multifaceted schema of tools, including feedback on the games as well as explanations of the predictions pertaining to the game. This study links up with previous studies in its incorporation of

information pertaining to the need for more engagement of the students and their enhanced participation. As has been previously stipulated, the lack of motivation among students primarily emanates from the lack of more opportunities for them to participate in online classes.

On the other hand, Ocak & Karakus (2021) sought to comprehend the difficulties that students encountered when undertaking online exams in the course of the pandemic. In “Undergraduate students’ views of and difficulties in online exams during the COVID-19 pandemic,” the researchers acknowledged that online exams differ from face-to-face exams in many ways. Online assessments use more visuals, can be conducted from one center, and offer enhanced ease in the analysis of results. Even more noteworthy is the wide range of questions that can be provided, including multiple-choice questions, matching questions, numbering questions, right-wrong questions, short answer questions, and fill-in-the-blank questions. In the study, which aimed at examining the views of undergraduate students on online exams, it was determined that students usually had technical problems, including sudden log-outs and internet connection problems, that affected their perception of the same. This was worsened by the fact that they were not particularly motivated to undertake online exams, as well as the fact that they did not have sufficient time or even feedback. The basic implication is that educational institutions can customize the assessment processes to enhance the learning process of the students. Of course, online learning is largely in its infancy, with most educational institutions having implemented online education for the first time during the pandemic. In this case, educators can persistently enhance the experience of the students through seeking more ways of engaging them and enhancing their motivation in the long term and the short term.

Al-Salman & Haider (2021) reiterated the need for proactive policies that would safeguard the efficiency of online learning. In “Jordanian University Students’ Views on Emergency Online Learning during COVID-19,” the researchers examined the impact of digital technology, psychological/economic status state, and type of course on the university students’ attitudes toward online learning. Given the multiplicity of barriers that can have a negative impact on the students’ perception of online learning, it is imperative that educational institutions and instructors are provided with sufficient training and internet bundles, even as

they are assisted in the securing of digital e-learning tools. This should be complemented by the enhancement of student social and psychological counseling, as well as academic advising services. The implementation of these measures would come in handy in safeguarding the effective and efficient implementation and adoption of the blended learning system as a transitional phase prior to shifting entirely to online learning.

Teachers and Students’ Views

Teachers and students are the main stakeholders in the education sector, so their perception of the efficacy of online learning would have a bearing on their potential to adopt it in the long term and the short term. In “Acceptance and Usage of Bibliographic Management Software in Higher Education: The Student and Teacher Point of View,” Setiani et al., (2020) noted that behavior intentions and facilitating conditions would have a significant bearing on the utilization of behavior from the perspective of teachers and students in their interaction with online platforms. Indeed, the motivation of students to undertake the utilization of a particular platform is influenced by their having used it in the past or having completed similar tasks, in which case they would have increased self-confidence and motivation to enhance their output in the long term and the short term. The intrinsic motivation would drive the behavior intention from the perspective of the user. This study is fundamental in demonstrating the need for incorporation of ease of use. On the same note, it demonstrates that as much as there may be challenges in the implementation of online learning and even negative attitudes towards the same, the increased utilization of online learning is bound to generate enhanced familiarity in the long term. This is bound to increase the acceptability of online learning. The basic implication is that user acceptance of the utilization of the tools would be affected by their self-confidence, experience, and motivation to generate papers of better quality.

Similar sentiments are outlined in “The Role of Information & Communication Technology in Elearning Environments: A Systematic Review,” where Qazi et al., (2021) noted that ICT continues to play a key role in the development of the learning and teaching of a wide range of subjects. It is noteworthy that the evolution of the internet has allowed for the growth of the web, which has assisted learners and instructors in Islamic education. It is, nevertheless, imperative that institutions strive to implement ICT and IT-

oriented learning methods and tools that are customized to their learning needs. Such tools would need to have varying features that would enhance their efficacy, including efficiency, speedy access, and optimum success in knowledge-gain benefit, not only in terms of the regular disciplines but also in subjects of interest for a particular organization.

Raes (2022), however, does not focus on purely online learning but instead concentrates on synchronous hybrid learning. In the course of synchronous hybrid learning, on-site and remote students would be linked and taught synchronously in a hybrid classroom. Nevertheless, it is imperative that one examines the factors that would affect the efficiency of learning in such a hybrid classroom, particularly in regard to student engagement. It is noteworthy that teaching space would have a bearing on teaching practice. Teachers have noted that actually seeing students was a major advantage of the design of hybrid classrooms and a key motivating factor. On the same note, students indicated experiencing the real-life lecture, as well as having the capacity to interact with the teacher, who can pose a question at any instance, would be a major motivating factor and a determinant of their engagement. This study is fundamental in the determination of the convergence of factors that both students and teachers perceive as important in the learning environment. It is noteworthy that they both perceive more interaction as a motivating factor. Indeed, any online learning platform should strive to ensure that the real-life classroom is replicated as much as possible. This would be achieved by allowing for more participation from the learners and the teachers in the classroom activities. As the study notes, conceptual understanding would not be affected much by the levels of presence (remote and physical). However, the levels of presence would have a bearing on effective engagement, experienced pressure, relatedness, intrinsic motivation, sense of belonging, sense of presence, autotelic experience, and cognitive absorption. The study results support earlier research that had underlined the differences in the experience of the students subject to their participation in either an online or physical learning environment. On the same note, both teachers and students are responsible for enhancing their engagement and motivation. This can be safeguarded through the utilization of the multiplicity of tools that have been provided by the online learning platforms in the long term and the short term.

Discussion

Teachers' views

There were 16 papers that analyzed the teachers' views toward online learning during the Covid-19 pandemic. Studies that handled this subject discussed different themes related to this topic, which included the teachers' perception and experience with online teaching, the teacher's perspective on the impact of the pandemic on online learning, the teachers' perception of the type of system and tools used for online teaching, and their perception of the difficulties faced when teaching online.

Teacher perception and experience with online teaching are discussed in many of the studies. An et al. (2021), Yeşiloğlu et al. (2021), Kundu and Bej (2021), and Memis (2021) explored teachers' feelings, experiences, and perspectives regarding online teaching during the COVID-19 pandemic. Similarly, Zeichner (2021) assessed teachers' views and their perceptions of ICT. In addition, Erumit (2021) identified the perceptions and experiences of preservice teachers about taking science courses online as part of the teacher education programs during the Covid-19 lockdown. The methodology used varied between studies, where some had used a mixed method of conducting interviews and questionnaires (An et al., 2021; Erumit, 2021; Kundu and Bej, 2021) while others used qualitative (Yeşiloğlu et al., 2021; Memis, 2021) and quantitative methods (Zeichner, 2021).

In general, the results showed a variety of positive and negative perceptions toward online learning among teachers. An et al. (2021) reported that teachers' perceptions toward using online learning show that they had skills in, and were comfortable teaching, online; they express their desire to learn further. At the same time, teachers express some worries related to the lack of student participation and engagement, difficulties in learning and accessing new technology, and other issues (An et al., 2021). Teachers in Yeşiloğlu et al.'s study (2021) also report that they are concerned about online learning; they report many advantages and disadvantages, most notably in the system used for teaching. Erumit (2021) argued that teachers in their study had many expectations, opportunities, concerns, and beliefs concerning the online education process; some of these resolve themselves during the utilization process, while others remain an obstacle for the teachers. Memis's (2021) study results shed light on an important point by noting that there is a lack of a

valid and reliable measurement tool to determine teachers' opinions. The results from Kundu and Bej's study (2021) also noted that it's difficult to assess readiness for online teaching as different subgroups of teachers exist, and this may require different approaches for support and counseling.

Other studies discussed the teachers' perspective on the impact of the pandemic on online learning. Aytaç (2021) and Karakaya et al (2020) have both assessed teachers' views and perceptions related to the impact of the Covid-19 pandemic on online education, using qualitative, respectively. The results showed that teachers have negative perceptions of competency pertaining to economic losses, deficiencies in education, uncertainty, and they have negative views pertaining to poor interactions, technological infrastructure, and unproductivity (Aytaç, 2021). Similarly, Karakaya et al (2020) reported that teachers have both positive and negative views about competencies, distance education, the adaptation of students, and teacher-parent communication. It was also determined that teachers have varying concerns about health, economy, and education. On the other hand, research results have shown that the pandemic process provides positive acquisitions in technology use, awareness, and skill development (Karakaya et al, 2020).

Furthermore, some studies assessed the teachers' perception of the type of system and tools used for online teaching. Goodarzi et al. (2020) evaluated the opinions of teachers toward online teaching of English textbooks in Iranian junior high schools. In addition, Hakami and Hernandez-Leo (2021) used the teacher's views to underline the importance of the careful selection of the system used in online learning. Gerard et al. (2021) also examined how teachers identified and creatively leverage open educational resources (OERs) and practices to facilitate self-directed science learning. The studies relied on the use of quantitative (Goodarzi et al., 2020; Hakami and Hernandez-Leo, 2021), and qualitative (Gerard et al., 2021) methodologies. The results based on Goodarzi et al.'s study (2020), show that teaching textbooks online caused shortcomings in terms of activities, methodology, topics, design, and insufficiency of teaching hours. Hakami and Hernandez-Leo (2021) noted that the online systems and tools used vary considerably and have a potential impact on digital well-being, which can affect psychological well-being, education, work, and community. For example, Gerard et al. (2021) emphasized their difference in the integration of learning and facilitating self-directed science

learning among teachers who use open educational resources (OERs) compared to the typical uses of technology for transmitting information or increasing productivity.

On the other hand, several studies discussed teacher perception of the difficulties faced when teaching online. Gkamas et al. (2019) examined the challenges faced during online learning using BYOD (Bring Your Own Devices). Mailizar et al (2020) and Marčinković et al. (2021) examined the views related to barriers to e-learning implementation during COVID-19 in secondary school mathematics. Aksela and Haatainen (2019) also conducted a study to understand the views of active teachers on the advantages and challenges of Project-Based Learning (PBL). In addition, Kaimara et al. (2021) examined the teachers' perception of barriers to DGB (digital game learning) implementation. The five studies used a combination of quantitative (Gkamas et al., 2019; Mailizar et al, 2020; Marčinković et al., 2021), qualitative (Aksela and Haatainen, 2019), and mixed methodologies (Kaimara et al., 2021). When it comes to the challenges of technologies, the Gkamas et al. (2019) study results showed that BYOD seems to be a promising technology, potentially adding long-term value in teaching and learning. However, a challenge is present in having adequate infrastructure and designing the technology in a secure and efficient manner. Similarly, Aksela and Haatainen (2019) found that the use of PBL was very helpful for teachers and in facilitating online teaching, yet some aspects present challenges such as project organization and time management, technical issues, resources, student-related challenges, and collaboration. Moreover, Marčinković et al.'s (2021) results showed that technology use in remote teaching would be negatively affected by limited internet access and the low digital competencies of families. On the other hand, technology use in remote teaching is positively affected by school experience in virtual environments, communication, school organization, and professional teacher education. When it comes to the most challenging factor, Mailizar (2020) noted that the student-level barrier had the highest impact on e-learning use. In addition, the student-level barrier shows a strong positive correlation with the school-level barrier and curriculum-level barrier. For Kaimara et al., (2021), a major obstacle is the inefficient allocation of available financial resources. According to their study results, resources are required for the supply of up-to-date equipment, devices, and educational software, as well as for the professional development and training of

teachers, school administrators, and policymakers (Kaimara et al., 2021).

Students' views

There were 11 papers that analyzed the students' views toward online learning during the Covid-19 pandemic. Studies that handled this topic discussed different themes related to this topic, which included the students' perceptions and attitudes, the impact of online learning, and their views toward online learning.

Students' perception of technology use and online learning acceptance was discussed in multiple studies among university students and in different countries. The study by Cook-Chennault and Villanueva (2020) analyzed engineering students' perceptions and experiences with playing online, real-time engineering games at an institution in the northeastern United States. Another study in Indonesia by Munir et al. (2021) analyzed how students perceived the use of WhatsApp during the pandemic in English Teaching Department classes. In addition, Adnan and Anwar (2020), Sahbaz (2020), and Durak & Çankaya (2020) evaluated the students' attitudes and perceptions toward digital and distance learning university courses during COVID-19. Moreover, Rivera-Vargas, Anderson & Cano (2021) explored the online learning experience and perception of online education among university students in Spain. Babayiğit et al. (2020) also evaluated the students' perceptions of online learning along with their practical implications.

When it comes to the methodology used in these studies, researchers used variations of methodologies, including the mixed methodology that used both interviews and questionnaires (Cook-Chennault and Villanueva, 2020; Rivera-Vargas, Anderson & Cano, 2021), a quantitative methodology that relied on the use of a questionnaire to collect data from students (Munir et al., 2021; Babayiğit et al., 2020; Adnan & Anwar, 2020), or qualitative methodology that relied on the use of a questionnaire with open-ended questions (Sahbaz, 2020; Durak & Çankaya, 2020). The results show that there is acceptance and utilization of technology as a learning tool among students, yet their perception of the usefulness and the ease of use for these technologies is affected by many factors. For example, the design of the software used in teaching affects the students' acceptance of technology and their perceptions of its usefulness and ease of use (Cook-Chennault and Villanueva, 2020).

Another factor is the presence of technical as well as monetary issues, such as the fact that internet speed has led to the perception of the inability of online learning to produce the desired results (Adnan & Anwar, 2020). As for general views and perceptions, the results from the study by Munir et al. (2021) show that the majority of students (73.2%) show positive views for the use of WhatsApp (WA) in the English Teaching Department, compared to (26.8%) negative views. Similar to Munir et al. (2021), Durak & Çankaya (2020) found positive views among those who use Microsoft Teams and emphasized that the students' fear of changing to online teaching is removed once they started using the online learning methodologies. On the other hand, Sahbaz (2020) reported that almost 90% of the participants are against distance education and are firm supporters of face-to-face interactions. Rivera-Vargas, Anderson, and Cano (2021), though they reported positive evaluations regarding the integration and adoption of technology and online education, noted that the students' perception is affected by the pedagogical and institutional support provided. Similar to that, Babayiğit et al. (2020) reported both positive and negative attitudes toward online learning by students, where those with positive attitudes tend to feel more secure, relaxed, and successful, unlike the pairs with negative attitudes.

Other studies examined the impact of perception of technology on the students' study achievements. Yusnilita (2020) assessed the impact of online learning on students; this study used a qualitative descriptive approach, with surveys as the method to collect the data. The results showed that the majority of the students (90%) answered that online learning is practical for them, 80% reported online learning to be interesting for students, and 65% answered that it was easier compared to regular classes. This positive perception of technology use has positively impacted the students' study achievements, as 85% of students always prepare for their learning by taking notes or recording it, 75% of students feel more confident joining online learning than being face-to-face in class, and 70% feel less disturbed during the class. The results also showed that 60% of students think that online learning could yield high-quality learning, as the teachers are more supportive in terms of accommodating the students and giving them feedback. In summary, Yusnilita (2020) concluded from the students' views that online learning provides a practical and flexible way of learning for students and also makes them more creative and active.

In addition, the studies also involved the students' perceptions of the difficulties of online learning. This theme was assessed in a paper by Ocak and Karakus (2021), who assessed the students' views of and difficulties with online exams during COVID-19. Also, Al-Salman and Haider (2021) investigated the influence of digital technology, instructional and assessment quality, economic status, psychological state, and course type on Jordanian university students' attitudes toward online learning. Also, a paper by Epaminonda et al. (2021) explored the views and experiences of students after the transition from face-to-face to online learning. The three studies relied on the use of qualitative (Ocak and Karakus, 2021) and quantitative methodologies (Al-Salman and Haider, 2021; Epaminonda et al., 2021). The results by Ocak and Karakus (2021) showed that students have mostly technical problems such as internet connection and sudden logout. Moreover, they also encounter different problems such as difficulty in being motivated for online exams, a lack of time, or insufficient feedback. As for Al-Salman and Haider's (2021) study, personal challenges (such as economic and psychological stress), decrease students' willingness to learn online in the future, while the quality of the online experience (including instructional and assessment quality) improve their attitudes toward online learning. The results from the study by Epaminonda et al. (2021) added that the transition to online learning enables students to use digital means they never used before and improve their skills, though not all students are comfortable with the use of this technology, and challenges are presented in terms of the lack of face-to-face interactions and the understanding of the material presented using online tools.

Teachers and students' views

Three papers analyzed the views of both students and teachers toward online learning during the Covid-19 pandemic. The studies handled one theme, which is the students' and teachers' acceptance of and engagement in online learning. Setiani et al. (2020) assessed the student and teacher acceptance of a Bibliographic Management Software (BMS). Another study by Qazi et al. (2021) focused on the opinions and views that are related to the implementation and adoption of ICT, and it also conducted a tweet analysis to look at the available public opinion on social media, e.g., Twitter, that relates to teaching through ICT-based methods. Raes (2022) also investigated the influencing factors of engagement and learning within the new

teaching environments from a student and teacher perspective.

The three studies relied on the use of different methodologies such as quantitative methodology (Setiani et al., 2020), systematic reviews (Qazi et al., 2021), and mixed methodology (Raes, 2022). The study results from Setiani et al. (2020) found that the use of technology has been accepted in student and teacher points of view. In addition, the study confirmed that behavior intention and facilitating conditions significantly influence the use of behavior from the student and teacher point of view when interacting with online platforms. As for Qazi et al. (2021), their findings suggest that ICT-based teaching methods in a research context require more attention. Lastly, Raes (2022) reported many important findings. In terms of the student perspective, Raes (2022) did not find any significant differences between physical and remote presence regarding conceptual understanding, yet significant differences were found in regard to effective engagement in favor of the on-site students and remote students having the opportunity to interact. In addition, the results showed that successful learning and teaching activities are interrelated with set, epistemic, and social design decisions. Moreover, teachers perceive students as a major advantage of the design of a hybrid classroom and a key motivating factor (Raes, 2022).

Conclusion and Recommendations

In conclusion, online learning has become increasingly important in contemporary society, particularly given the disruptions by the Covid-19 pandemic. It is noteworthy that more than 1.5 billion students across the world have been affected by the pandemic, with their learning being disrupted. Nevertheless, online learning has taken up the mantle, with the assistance of digital technologies and the increased penetration of the internet in contemporary society. As much as this new technology may be effective in enhancing learning, the lack of motivation, coupled with its negative effects on social relations and engagements of students, can have a negative impact on perception.

This study presented a systematic review of online learning during the COVID-19 pandemic from teachers' views, students' views, and teachers' and students' views. The review process was conducted using the systematic literature review guidelines of 30 studies. The analysis criteria on the selected studies were classified into three thematic groups: online

learning from the teachers' view, students' view, and teachers' and students' view. The previous studies showed the importance of online learning, especially with schools being in lockdown all over the world. It was essential in this study to discuss the methodologies applied in these studies as well as the findings.

Teachers and students both agreed on the importance of the design of implementing online learning. Studies showed the advantages of using online learning, as well as positive attitudes and perceptions from both teachers and students. However, different challenges were recorded in these studies of online learning during the Covid-19 pandemic. The results of the study revealed a lack of discussion about the teachers' and students' views toward online learning during the Covid-19 pandemic. A further empirical investigation is crucial to better understand the impact of online learning practices and uses.

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