

Challenges of Online Learning for Students with Disabilities during the Pandemic Covid-19: A Systematic Literature Review

Teni Purwati, Diah Wahyu Ningsih and Costrie Ganes Widayanti
Faculty of Psychology, Universitas Diponegoro, Semarang, Indonesia

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Abstract: The COVID-19 pandemic has had an impact on how the learning system is pre-arranged. Changes in the situation have led to a shift in the education system using online learning. Online learning is also applied to students with disabilities, so it requires special attention to the learning process. The systematic literature review was conducted to describe empirical evidence of online learning systems for students with disabilities during the pandemic. The findings illustrated students with disabilities experienced stress, anxiety about academic achievement, lack of material, low learning engagement, and learning loss caused by barriers to accessing learning materials during online learning due to lack of internet access and technology. In contrast, lack of social interaction, flexible study time and task work, ability to be closer to family, and ability to develop creativity and take care of themselves were some reasons for students with disabilities enjoying online learning. Learning supports should be developed by teachers, peers, and families so that students with disabilities can participate fully during online learning.

1 INTRODUCTION

The presence of the Coronavirus (SARS-COV-2) at the end of 2019 in Wuhan, Hubei province in China has disrupted all aspects of life, including education. Schools provide opportunities for students to study from home due to the school closure policy which causes schools to hold online learning to minimize the increase in the number of COVID-19 cases in the community. Some experts highlight the impact of school closures, such as creating achievement gaps among students (Aminu, 2020), increasing absenteeism (Gallagher-mackay et al., 2021; Harmey, 2021), and also affecting the physical and mental health of students (Luan, 2020; Harmey, 2021). Temporary school closures can affect students' learning experiences and learning outcomes (Gallagher-mackay et al., 2021). In line with that, school closures will also disrupt learning and create serious gaps in students and academic achievement, so that the impact on the world of education begins to disrupt learning to grow and develop better, confusion and stress for teachers, and the parents who are not ready in the process to distance learning for children (Aminu, 2020). Disparities can be in the form of health and child health care, high economic costs in education and health, and school dropouts (Aminu,

2020; UNICEF, 2021). This condition requires careful and strong efforts on effective distance learning strategies for groups of underprivileged and disabled students due to school closures. This condition requires careful and strong efforts on effective distance learning strategies for groups of underprivileged and disabled students due to school closures.

Moving to online learning can be an unprecedented situation for students with disabilities. Students with disabilities are vulnerable to additional challenges due to the COVID-19 pandemic which has made education services increasingly out of reach for them. This situation can put these students at risk of accelerating inequalities in learning experiences and opportunities (Grant, 2021) for students with disabilities. This has the potential to hamper the right to education which has been a challenge for these students long before the pandemic.

Closures and periods of learning disruption during the pandemic have increased absenteeism, which is a measure of engagement in education and a school's ability to meet student needs. School closures impair access to special education services and programs for students with disabilities as well as English language learners (Gallagher-mackay et al., 2021). School closures also have multidimensional consequences, not only hampering the learning process but also

impacting children's well-being, physical and mental health. This statement is supported by research conducted by Gallagher-Mackay et al., (2021) which states that mass and local school closures, various models of education delivery, and support gaps for students with disabilities.

Several studies have reported that students with disabilities are vulnerable to low academic achievement and well-being as a result of the way they navigate online learning during a pandemic situation (Toste et al, 2021). Other research reports also reveal that children, especially with disabilities, tend to experience delays in the learning process that cause learning loss (Meyer et al., 2021). Evidence-based studies should be well presented to illustrate the challenges experienced by students with disabilities which are expected to urge education and school authorities to take steps forward in providing assistance and ensuring that students' needs are addressed, and potential problems, such as inequality and exclusion, stemming from the way education is managed during the COVID-19 pandemic, also needs to be challenged.

This paper aims to answer the following questions:

1. What is the evidence of online learning imposed by the COVID-19 pandemic for students with disabilities?
2. What lessons can be learned for the learning of students with disabilities during the COVID-19 pandemic?

2 METHODS

This paper is a systematic review that serves to present facts related to online learning for students with disabilities during the COVID-19 pandemic. Article search started in June 2020 using several databases to identify complete English and Indonesian peer-reviewed articles. We used the PRISMA flowchart as a step to find and analyze peer-reviewed articles that meet the inclusion criteria (Moher et al., 2009). The inclusion criteria used in the screening process are as follows:

- Published in a peer-reviewed journal
- Delivered in either Indonesian or English
- Articles are empirical studies, not literature studies (using quantitative and/or qualitative methods)
- Articles discussing online learning during the COVID-19 pandemic

- Articles focus on students with disabilities
- Articles are available online full-text

The process begins by identifying and screening articles published between 2019 and 2021 using the keywords "online learning", "students with disabilities", "COVID-19", and "pandemic". Using databases from Google Scholar, Scopus, and ScienceDirect. Google Scholar was chosen for its reputation as a 'free' source of publications and citations. Journal articles were examined for content vulnerabilities to review the literature. The action taken is to check the abstract first. To obtain accurate and complete data, a thorough analysis is carried out. The examination will be used to determine articles according to the purpose of writing a literature review which includes the latest methods used in the article, as well as discussing online learning for students with disabilities during the COVID-19 pandemic. An overview of the filtering process using a flow chart in the search for journal articles can be seen in Figure 1 below.

3 RESULTS

The search results with the database found 4 articles that were relevant and were analyzed. These articles showed that the research was conducted in 2 Asian countries (the Philippines and Indonesia), Croatia and Turkey. Data from articles obtained from these 4 articles can be viewed in Table 1.

The findings showed 4 main themes explaining the challenges of online learning for students with disabilities during the COVID-19 pandemic. They were challenges of online learning, negative impacts of online learning, positive impacts of online learning, and efforts to overcome challenges and impacts during online learning experienced by students with disabilities.

3.1 Challenges Faced by Students with Disabilities

During online learning, students with disabilities experienced obstacles and challenges in accessing learning, such as limitations of assistive technology and the internet as well as the availability of materials (Dianito et al., 2021; Ro'fah et al., 2020). Furthermore, Ro'fah et al.'s study (2020) revealed that learning materials were inaccessible, especially for the blind and deaf students.

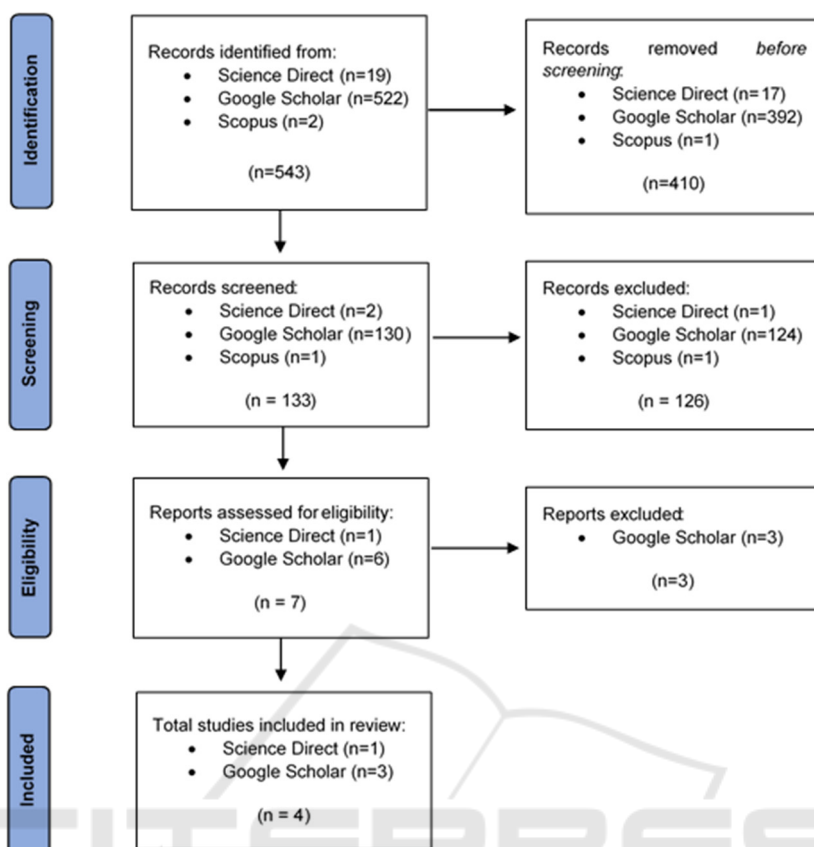


Figure 1: The PRISMA Flow Chart.

Table 1: Summary of Data Extraction Results.

No	Article title and Author	Participants and Research Instruments	Main Research Findings
1	A glimpse into the lived experiences and challenges faced of PWD towards online learning in the Philippines amidst COVID-19 pandemic (Dianito et al., 2021)	<ul style="list-style-type: none"> - Research conducted in the Philippines - Qualitative - 10 students with disabilities - Data collection using a semi-structured interview 	<ul style="list-style-type: none"> - Students with disabilities experienced challenges during online learning, but they remain resilient through support provided by family and peers, a positive mindset, and responsibility - Students with disabilities experienced limitations on assistive technology and the Internet, social and financial problems, cognitive and mental health problems - The existence of a support system, a sense of responsibility, and a positive mindset from students are effective coping systems developed by students with disabilities
2	Case Study of Students with Disabilities in Vocational High Schools During the Online Virtual Class Period Due to Covid-19 (Svalina & Ivić, 2020)	<ul style="list-style-type: none"> - Research in Croatia - Qualitative - The participants: a student with disabilities, mother, educational rehabilitator, and foreign language teacher, - The data collection method was a semi-structured interview 	<ul style="list-style-type: none"> - Students with disabilities did online learning well and had more time to do assignments - Teachers should do and have a dual role to realize a successful inclusive school.

Table 1: Summary of Data Extraction Results (cont.).

No	Article title and Author	Participants and Research Instruments	Main Research Findings
3	Is Online Learning Accessible During the COVID-19 Pandemic? Voices and Experiences of Students with Disabilities UIN Sunan Kalijaga (Ro'fah et al., 2020)	<ul style="list-style-type: none"> - Research in Indonesia - Qualitative - 34 students with disabilities who received services and support from the Disability Service Center (PLD) - Screening of participants regarding types of disabilities, preferences for learning systems, and platforms used, using a quantitative method - The questionnaire used is to determine the type of disability. The result for questionnaire is 11,70% physical disabled, 41,17% blind, 44,11 % deaf, 2, 90% slow learners - Interviews conducted regarding the experiences and barriers experienced by students with disabilities in online learning 	<ul style="list-style-type: none"> - Individuals with physical disabilities, blind, hearing or deaf, slow learners preferred face-to-face learning over online learning. Online learning impeded students with disabilities to understand the material because the teachers only provided assignments with a limited explanation of the material. - Students felt no support from peers who used to help them in their daily activities on campus. - 20% of students with disabilities prefer online learning because they benefit from learning through writing or text - The platforms used are campus e-learning, WhatsApp, Google class, zoom, telegram, e-mail. - Barriers in online learning are related to internet access and the lack of material provided. This condition has an impact on students with visual impairments, while for deaf students, the obstacle is when the lecturer asks to find material that uses audio such as WhatsApp recording, YouTube or making video recordings - Teachers' lack of awareness experienced by students with disabilities - Modifying learning materials, assignments, and learning methods so that students with disabilities can learn - Receiving support from families and teachers is important for online learning - Online learning was not accessible for a student with disabilities
4	Home participation, support, and barriers among children with attention deficit/hyperactivity disorder before and during the COVID-19 pandemic (Kara et al., 2021)	<ul style="list-style-type: none"> - Research in Turkey - Qualitative - 55 children with ADHD, ages 6-11, and 55 mothers. - Children with ADHD receive services from the Child and Adolescent Psychiatry Clinic in Antalya, Turkey, between September 2019 and June 2020 - Data collection: questionnaire about participation and environmental factors in the home, school, and community settings used as a guide in conducting structured interviews and questionnaire about Sociodemographic questionnaire 	<ul style="list-style-type: none"> - Increased involvement of children with video games, arts, computers, hobbies, crafts, housework, and personal care management during the COVID-19 pandemic - Mothers expected their children to spend less time in front of a computer screen, both before COVID-19 and during the COVID-19 pandemic - Children with ADHD were more interactive with people or in household activities - Online learning resulted in increased participation in home activities social activity demands

3.2 Negative Impacts Experienced by Students with Disabilities

Online learning impacted students with disabilities about cognitive problems, mental health, social and financial problems (Dianito et al., 2021). Being exposed to intensive online learning caused students with disabilities to spend more time in front of the computer (Kara et al., 2021) which potentially led to difficulties in understanding the material (Ro'fah et al., 2020). All of which influenced their low engagement in learning (Carver & Rowe, 2021). So that online learning carried out on students with disabilities also has an impact on daily life, mental and cognitive conditions of students with disabilities.

3.3 Positive Impacts on Students with Disabilities

Online learning provided benefits for students with disabilities. Having limited social interaction was found to reduce their anxiety level. For example, a study by Kara et al., (2021) on students with ADHD suggested that they were likely to have difficulties in developing social activities. Online learning also enabled students with disabilities to have flexible learning times and opportunities to learn using accessible learning materials (Carver & Rowe 2021), which made them enjoy their learning (Svalina & Ivić, 2020).

3.4 Efforts to Overcome the Challenges and Impacts Experienced by Students with Disabilities

Several efforts had been made to support students with disabilities in their learning. Teachers' roles were significantly important in providing access to materials and preparation-related infrastructure (Ro'fah et al., 2020) so that students with disabilities are facilitated to achieve success in learning rather than excluding them as if success could only be achieved by some, which could hinder the implementation of inclusive school (Svalina & Ivić, 2020). Families could be encouraged to be a support system to accommodate students with disabilities to actively participate in learning activities during the COVID-19 pandemic (Kara et al., 2021).

4 DISCUSSION

Online learning has been taken as one of the policies in education associated with COVID-19. This literature study shows that online learning affects students with disabilities in many ways. The practice of online learning disrupts students with disabilities' academic achievement. Students with disabilities experience various challenges, both academically and psychologically. Fear of academic failure due to inaccessible learning materials and methods influences their limited participation (Zhang et al., 2021). Inaccessible learning materials can trigger students with disabilities' sense of worry related to their academic performance. Inaccessible learning materials, not only hinder students with disabilities from engaging with the content of the materials, resources, and activities, but more importantly from participating and contributing to the learning process. Students with disabilities may have access to learning platforms through which learning is taking place, however, these platforms may not guarantee access to all learning activities because they may provide a lack of accessible features that make learning more challenging. Technology-related issues experienced by students with disabilities influence their learning engagement. Technology can be frustrating for students with disabilities as they may experience difficulties in navigating online learning due to poor connectivity (Lake & Makori, 2020) and minimum technical guidance (Carver & Rowe, 2020). This indicates that students with disabilities are at risk of having limited access to services which potentially heightens their risk of being outcast from learning (Gallagher-Mackay et al., 2021), experiencing educational loss (Bateman & McKittrick, 2020; Grant, 2021) and achievement disparities (Jochim, Hassel, & Clifford, 2020). Without considering students with disabilities' needs, their access to learning services has been reduced which positions them among the most affected group during the COVID-pandemic (Grant, 2021). Therefore, teachers should address and effectively develop learning tools that can be accessible for all students. This pandemic calls for a solution to ensure participation of students with disabilities through the use of technology that meets their educational needs. This means that accessible learning should comprise technology and pedagogical accessibilities (Guglielman, 2010). Teachers are challenged to create, develop, and choose appropriate pedagogy and technology to ensure inclusive online learning experiences for all students, including those with disabilities.

Teachers need to be flexible in finding alternatives for learning strategies that meet these students' needs. It is important for teachers to know the advantages and disadvantages of technology used in learning for each of their students, especially for students with disabilities. Teachers also have to think about what kind of instruction will be given to students with disabilities (Rice et al., 2018). Conducting online learning for students with disabilities can be challenging for teachers because teachers should pay attention to the characteristics of students with disabilities, and how teachers recognise these students' strengths as a way to make learning effective. Online learning should provide students with disabilities opportunities to learn flexibly, which gives them control to decide when and how to learn in ways that are convenient for them (Carver & Rowe, 2021). For example, students with blindness who are not able to acquire information visually, teachers should provide strategy during online learning that allows them to receive learning material audibly. It is important in responding to online learning to see the characteristics of students' disabilities so that they can participate in the learning process.

Online learning should also address and expand learning opportunities for students with disabilities to develop socially. Online learning conditions during a pandemic will cause students to experience stronger feelings of isolation and tend to be more vulnerable to mental health problems (Jesamine et al., 2021). Although online learning may reduce social anxiety behaviors for some students with disabilities because they do not interact socially and anxiety about social stigma towards students with disabilities, however, this situation potentially widens the interaction gap between students with and without disabilities, and between teachers and students with disabilities (Lyner-Cleophas et al., 2021). Not only mental health problems, online learning conditions will have an impact on the academics of students with disabilities (Dianito et al., 2021). Support from students or peers, teachers, and parents for students with disabilities will be able to make students cultivate positive emotions and experience success during the online learning process (Keaton & Gilbert, 2020). Social support from peers to inhibit the magnitude of the impact received by students during online learning. Peer supports also have a role in the success of the process of online learning for students with disabilities. The presence of others can influence students' motivation to engage in learning which influences their academic achievement (Carver & Rowe, 2020). Teachers are likely to have less interaction with students with disabilities, which

increases their potential of being left behind. Creating online learning that is inclusive for all students should weigh teachers' decisions or actions when delivering the learning materials, which aims to minimise barriers and support students' engagements by providing multiple and flexible modes of learning (Dell, Dell, & Blackwell, 2015).

The lesson learned from these systematic literature review studies suggests that teachers and families play important roles in the success of learning for students with disabilities. The challenges and impacts of online learning on students with disabilities need to be addressed so that the learning process runs optimally. During online learning, parents have a responsibility to help students' learning process (McGhee, 2021). Parents are challenged to assist students with disabilities during online learning. This situation might be different during offline learning where students with disabilities are taught in schools by teachers who have teaching competencies to manage the class. Parents suddenly become a substitute teacher for their children, which potentially affect students with disabilities' mental conditions, such as depression and behavioral changes due to the transition of the learning system in schools to online learning (Asbury et al., 2021). Parents and teachers should collaborate so that parents can effectively assist their children (Asbury et al., 2021). Teachers and families need to develop a support system that enables students with disabilities to learn effectively and more importantly create a learning environment that aims to cultivate inclusive online learning that promotes participation and the success of students with disabilities. Collaborations between teachers and parents of students with disabilities are expected to help these students learn effectively and attend to potential stress or mental health problems associated with changes in learning system and environment.

5 CONCLUSION

Online learning gives challenges to students with disabilities in social life, mental health, and education. The challenges include low level of learning engagement as a result of accessibility barriers in regards to learning materials, internet connectivity, and technology. Limited social connections with teachers and peers during online learning can pose other challenges for students with disabilities, which is likely to impact them from developing social competence. However, challenges of online learning experienced by students with

disabilities require teachers to carefully address and form effective strategies and learning systems to ensure that all students can learn and succeed.

This study has several limitations, however, that should be addressed. For instance, the result focuses on the search keywords; thus, some studies may not be included. This study is only based on findings from the literature review, which is derived from limited articles. Despite these limitations, this study provides a solid ground to explore strategies for creating inclusive online learning for students with disabilities.

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