Date of Submission: March, 2025 **Date of Acceptance:** May, 2025 **Date of Publication:** June, 2025

EMERGENCY PERIOD AS A CATALYST FOR THE DEVELOPMENT OF INCLUSIVE DISTANCE LEARNING: ANALYSIS OF EXPERIENCE

PERIODO DE EMERGENCIA COMO CATALIZADOR PARA EL DESARROLLO DE LA EDUCACIÓN INCLUSIVA A DISTANCIA: ANÁLISIS DE LA EX-

Tokhir Rakhimov[1*]
E-mail: rakhimov@gmail.com
ORCID: https://orcid.org/0000-0002-5755-5918
Olha Prokopenko[2]
E-mail: prokopenko@gmail.com
ORCID: https://orcid.org/0000-0003-1362-478X
Nadiya Kichuk[3]
E-mail: kichuk@ukr.net
ORCID: https://orcid.org/0000-0002-5963-7802
Tetiana Nych[4]
E-mail: nych@gmail.com
ORCID: https://orcid.org/0000-0003-3842-2009
Iryna Bushman[5]
E-mail: bushman@gmail.com
ORCID: https://orcid.org/0000-0003-1036-9066
[1] National University of Uzbekistan, Uzbekistan.
[2] Estonian Entrepreneurship University of Applied Sciences; Tallinn, Estonia; Sumy State Pedagogical University named after A.S. Makarenko, Ukraine.
[3] Izmail State University of Humanities, Ukraine.
[4] Taras Shevchenko National University of Kyiv, Ukraine
[5] SKILLS VMBO CollegeHeemkerk, Netherlands.
*Corresponding author

Suggested citation (APA, seventh ed.)

Rakhimov, T., Prokopenko, O., Kichuk, N., Nych, T., & Bushman, I. (2025). Emergency period as a catalyst for the development of inclusive distance learning: analysis of experience. *Revista Conrado, 21*(104), e4599.

ABSTRACT

The impact of the emergency period on global education systems has led to a rapid transition to distance learning and has revealed challenges in integrating students with special educational needs. The main goal of this research is to study the part of inclusive distance learning during the pandemic, research distance learning technologies, pedagogical challenges to working with distance learning, and social challenges of the educational system and measures against these hurdles. The study analyzes the key factors leading to the development of an inclusive learning environment using secondary data analysis, which includes adaptive technologies along with teacher training and government policy interventions. The research shows the necessity of investing in inclusive practices and digital tools and helps teachers to develop in order to allow more equal access to education for all students. It ends with practical recommendations for educational institutions, teachers, and policymakers and sets the agenda for further research to examine the long-term impact of the pandemic on inclusive education.

Keywords:

Inclusive education, distance learning, educational technology, teacher training, special educational needs, government policy.

RESUMEN

El impacto del período de emergencia en los sistemas educativos mundiales ha provocada una rápida transición al aprendizaje a distancia y ha revelado desafíos en la integración de estudiantes con necesidades educativas especiales. El objetivo principal de esta investigación es estudiar la parte del aprendizaje a distancia inclusivo durante la pandemia, investigar las tecnologías de aprendizaje a distancia, los desafíos pedagógicos para trabajar con el aprendizaje a distancia y los desafíos sociales del sistema educativo y las medidas para enfrentar estos obstáculos. El estudio analiza los factores clave que conducen al desarrollo de un entorno de aprendizaje inclusivo utilizando un análisis de datos secundarios, que incluye tecnologías adaptativas junto con la capacitación de docentes e intervenciones de políticas

gubernamentales. La investigación muestra la necesidad de invertir en prácticas inclusivas y herramientas digitales y ayuda a los docentes a desarrollarse para permitir un acceso más igualitario a la educación para todos los estudiantes. Termina con recomendaciones prácticas para instituciones educativas, docentes y formuladores de políticas y establece la agenda para futuras investigaciones para examinar el impacto a largo plazo de la pandemia en la educación inclusiva.

Palabras clave:

Educación inclusiva, aprendizaje a distancia, tecnología educativa, formación docente, necesidades educativas especiales, política gubernamental.

INTRODUCTION

The emergency period has dramatically affected the education system globally, resulting in an unprecedented leap towards distance learning. Rapidly, schools and universities had to adapt to online platforms, changing the traditional ways of teaching into online environments (Reuge et al., 2021). Despite this transition maintaining continuity in education, it uncovered many issues, most crucially for students with special educational needs. This puts into relief the necessity for inclusive practices in distance education, as it would be essential to provide equal access to learning opportunities for all students, including those who are physically, cognitively, or emotionally different (Wang et al., 2020).

Social equity, academic success, and every learner getting the tools and resources they need to succeed begin with inclusive education (Bao, 2020). However, inclusivity is also a challenge in the distance learning format, and innovative solutions, as well as great support, are needed both from educators and students. Accessibility to technology, tailored learning resources, and teacher preparedness turned out to be factors that answered the varied needs of learners during the pandemic.

Before and during the pandemic, most of the studies regarding the application of gamification in e-learning have highlighted the gamification's capacity to involve students and improve learning experiences Burlacu et al. (2023). The authors propose that the correct implementation of gamification can increase learner motivation and performance, especially in online settings. This is important for the current study, which explores how these strategies can be meaningful for inclusive learning, particularly for students with special needs. The integration of gamification into eLearning systems is proposed by Yamani (2021), using a conceptual framework based on instructional design models. The objective of this framework is to offer a scaffolded approach to seamlessly implementing game-like elements into online courses, that can be customized to cater to a range of learning preferences. Gamification integration for inclusive education ensures it is fully required to fit all students' needs with and even without disability.

According to Li (2022), the workforce needs to be reskilled and upskilled in response to Industry 4.0. Although the central concern is with workforce development, the study examines the contribution of digital skills to online education, specifically in the context of adjusting to new technologies. In particular, cultivating digital literacy is essential for inclusive distance learning, in order to guarantee that all students can have full participation in the distance online learning process. The digital divide is still a big roadblock to complete switch to internet education, as discussed by Lythreatis et al. (2022). Their review emphasizes the underprivileged areas' disparity to technology and suggest a future research agenda to mitigate such gaps. The gap between those with and without access to technology is one of the most critical problems in inclusive distance learning; unequal access to technology may only exacerbate exclusion of students with special educational needs.

In Tawfik et al. (2021), the focus is on the barriers to teaching in K-12 online learning environments in terms of first and second-order challenges. They comprise difficulties such as technological difficulties, lack of teacher preparedness and the requirement of proper support systems. However, their findings speak to the need for professional development for educators as part of ensuring inclusive learning is able to be effectively implemented in online settings. Koldovskiy (2024), stresses that digital transformation can positively impact the quality of scientific and educational processes only when it includes a transdisciplinary approach. The paper shows how digital tools can be applied to improve educational outcomes on a lifelong learning journey. The results of practical distance learning testing using virtual museums demonstrated by Tserklevych et al. (2021), are high. Innovative distance education tool has proved its efficiency in enhancing the quality of the educational process, improving information and media literacy, and inclusiveness in education. In the context of the emergency period, in addition to students with disabilities, the proposed innovations are indispensable.

Through these studies, a closer understanding has been developed about the different aspects which influence inclusive distance learning. This highlights the need to take into consideration technological, pedagogical and social barriers in order to create an equitable and inclusive environment of education for students with special educational needs.

This study analyzes the development and practice of inclusive distance learning practices during the emergency period. The aim is to investigate innovative measures adopted to ensure equitable access to education among students with special needs in virtual systems. The study looks into both global and national experiences in order to identify successful strategies, to assess their impact on the educational process, and to provide recommendations for making distance learning more inclusive and sustainable in future educational settings.

Shipped worldwide, educational institutions have been forced to shift to distance learning and this has exposed major lapses in inclusive virtual education systems. While many services were provided, many students faced disproportionate barriers – including very limited technology access and adaptive resources and lack of adequate teacher training in inclusive practices. Despite the breeding of innovative solutions during this period, a thorough review of their effectiveness and long-term potential does not exist. This shows the need for research to explore how inclusive was distance learning implemented during the pandemic and what are persistent challenges in ensuring equitable access to it in digital format.

The goal of this study was to analyze the experiences from the implementation of inclusive distance learning during the emergency period. The main purpose of this study is to discover effective practices, challenges, and ways of improvement for inclusion in virtual educational environments. In doing so, the research aims to bring its findings into the growing discourse on how inclusive education for children with language and spoken communication impairments, like Down syndrome, can be improved in a digital era and provides specific policy, curricular, and pedagogical recommendations for policy makers and other stakeholders.

This study is focused on inclusive distance learning as its basic object, namely how it was evolving and adapting during the emergency period. Distance learning inclusive is a vital part of education in today's world and covering the integration of the students of different perspectives into virtual learning spaces in equal and accessible forms. Both the urgency and challenge of supporting all learners, including those with special educational needs, in fully participating in remote education was brought to the fore during the pandemic.

This research focuses on the innovative practices which have redefined the educational process at this peculiar time. The technological, the pedagogical and the social barriers that arose as schools and educators were forced to adapt to online formats left them with no choice but to adopt creative approaches. They included having the development of adaptive learning technologies, as well as personalized teaching strategies that promote more collaboration between teachers, parents, and support specialists.

MATERIALS AND METHODS

The data for this study was secondary and prepared from many data sources including the academic articles, government reports and publications from the educational institutions and data from the International Organizations. The data analyzed was relevant to the effect of the emergency period on inclusive distance learning remote access to technology, educational practices and policy intervention in different countries. Secondary data was preferred as it could synthesize the global and country's context as well as challenges and innovations in inclusive education during the pandemic. The data was reviewed and analyzed to extract key trends, challenges, and resolution of inclusive distance learning. A qualitative approach was used for this study to evaluate the effectiveness of different strategies and practice using data collected.

The premise on which inclusive education is based is that every student, irrespective of ability or need has a right to be treated equally and fully participate in educational environments that enhance his/her academic, social and emotional growth. Equity, accessibility, and respecting diversity are values central to this approach, seeking that every learner be able to access quality education and the resources that will help him or her succeed (Reuge et al., 2021). This model stresses on personalized support, collaborative teaching practices and customizing curriculum and learning environment for a number of needs. Students feel that they belong, that the barriers to discrimination are broken down and that there is a more equitable society.

In the world of eLearning, inclusivity is about finding solutions to the particular challenges presented by online learning environments. Where traditional classrooms have the face to face interaction, physical accommodations, online education depends on digital tools and resource. However, this shift requires accessible platforms from which students can access a variety of materials; screen readers for students with visual impairments, captioning for students who are hearing impaired, and interactive tools that engage students with cognitive or developmental challenges (Wang et al., 2020). Furthermore, teachers should also be trained in implementing strategies for building instruction and instruction delivery which will engage as well as make students accessible in an online environment. Online education is therefore inclusive when it includes adaptive technologies, continuing teacher training, and collaborative work among educators, families,

and specialists in creating supportive, effective learning for all students.

Despite the possibility to retain the continuity of education during disruptions, such as the emergency period, distance learning comes with numerous challenges and prospect. From a tech standpoint, the move to remote learning has underscored the digital divide; a good number of students simply don't have access to an internet connection that works, or a suitable device. In addition, distance learning is effective only when the platforms and tools used are of good quality, easy to use, and suitable to meeting the specific needs of users. Interactive learning management systems and virtual classrooms, as well as adaptive software, have garnered attention with promise of innovation but uneven implementation across different regions and across socioeconomic groups. The stark differences in digital accessibility made plain the need to channel targeted investment into digital infrastructure, to create equal opportunities in approaching technology.

As pedagogical standard, distance learning needs educators, instead of changing their traditional teaching methods and developing the effective virtual strategies. Teachers suddenly needed to change the way they provided content digitally, without often satisfactory training or resources. The authors interested in the unique challenge remote learning schools face with engaging students when the students are in remote settings, as these remote settings make active participation and collaboration with our students difficult. Additionally, however, the situation has also bred the adoption of innovative instructional techniques, including the flipped classroom, gamification, and project-based learning, that can engage students and lead to improved outcomes. Also, distance learning has offered opportunities for personalized education by enabling educators to create unique lessons for each child based on data from data driven tools.

The success of social aspects of distance learning depend largely on how teachers, parents and society at large played their roles. In addition to being the facilitators of knowledge they provide stimuli, emotional support systems and become motivators to the students. Keeping this connection in a virtual context is much more difficult, but not any less important. In many cases, parents become more involved, particularly so for younger children or students with special needs, thus requiring more involvement on their part. On the other hand, society also contributes to shaping a culture where education is valued and innovative learning models are supported. To equitably address the social and emotional needs of students, and to develop a longlisting distance education framework, educators, families, and policymakers must collaborate. The challenges are great, but the opportunities to use technology and collaboration to transform education make distance learning an urgent priority for innovation and development.

Analysis of experiences during the emergency period

Examples of varying experiences across the globe in organizing inclusive distance learning during the emergency period show how diverse challenges had to be addressed and how creative solutions were used to ensure that even students with special educational needs continued their education remotely (Bao, 2020). In South Korea and Finland, for example, the transition to online learning was mostly smooth because these countries are well established with their digital infrastructure. The good news here is that these countries have already invested in digital education tools and platforms so they could have adapted the remote learning faster than others. For instance, South Korea created a systemic pan Korean online education that incorporated adaptive technologies for students with disabilities like screen readers or speech to text. Finland's inclusive education system, well known for its strong support of students with special needs, took these services online, providing individualized support and accessible resources to all learners online as well (Wang et al., 2020).

Whereas several developing countries had quite a difficult time in offering inclusive distance learning. In countries such as India or most African countries, although major obstacles they bared, internet and technology access were limited. Within those regions, there were many in the population that did not have (or couldn't afford) digital learning tools, compounding the already present educational inequalities. In response, some governments and NGOs developed interesting solutions like the distribution of low-cost devices and learning materials offline. For instance, in India, the government launched initiatives to provide the educational content over television and radio since, students in remote area did not have any internet and could not access learning resources. Nevertheless, these efforts fell short, and students with special needs lacked the personalized support, and adaptive technologies they truly needed.

The United States and the United Kingdom were no exception in facing challenges, however they were also able to implement big reforms to support inclusive online education. Wang et al. (2020), stated that, in the U.S., the federal government provided technology grant and special education resources to buy needed devices and to train teachers to support students with disabilities in the U.S. schools in virtual learning. Likewise, the UK had policies to equip students with special educational needs with the right experience from learning including one on one virtual

sessions and personalized learning plan. Despite these efforts, however, both countries continued to struggle with making all students equally accessible, and especially students from low income families or rural areas.

The experiences from different countries showcase the necessity of a total and general view related with distance training. Technological infrastructure and resources are needed, but so are targeted policies, teacher training, community support to guarantee that students have every chance to learn well in a remote setting regardless of circumstances. Bao (2020), was realized by the pandemic which has emphasized the importance of global cooperation and innovation in closing the digital divide and improving inclusive education all over the world.

Such a global shift to distance learning during the emergency period has presented a number of challenges particularly around delivering education uninterrupted to all students, including those with special educational needs. As many countries attended to bridging the digital divide and giving equal access to education for everybody, inclusive distance learning became a key focus of many countries around the world. Different nation's experiences of organizing inclusive distance education may use different strategies, institutions and models to support students with disabilities, adapt to online distance, and overcoming technological barriers. In Table 1, several countries are examined, looking at the approaches they took, the variety of their methods, and the different challenges they faced as well as the effectiveness of their solutions.

Table 1. The experiences of different countries in organizing inclusive distance learning, focusing on real institutions, models, and data.

No.	Country	Institution/program	Inclusive distance learning strategies	Data/supporting information
1.	South Korea	Ministry of Education, Korea National Open University	Nationwide online education system, use of adaptive technology like speech-to-text and screen readers for students with disabilities.	Korea National Open University provides specialized distance education programs. Government's «K-12 Smart Education» program has ensured 100% of public schools are equipped with digital resources.
2.	Finland	Finnish National Agency for Education (EDUFI)	Integration of assistive technologies, personalized support for students with disabilities, and inclusive curriculum design.	Finland ranked 2nd in the OECD's 2020 report on digital education, and 95% of Finnish students have access to a personal learning device. Inclusivity is at the core of the Finnish education system.
3.	India	National Repository of Open Educational Resources (NROER)	Use of offline materials (TV, radio, printed materials), distribution of low-cost devices for students in rural areas.	The Indian government launched «PM eVIDYA» for digital education via TV and radio. Over 50,000 students benefitted from the program in remote areas.
4.	United States	U.S. Department of Education (ED) / Office of Special Education Programs (OSEP)	Federal funding for digital devices, special education resources, and training for inclusive teaching in remote environments.	$13.2 billion in funding from the U.S. Department of Education to support special education in distance learning (2020). Over 60% of U.S. schools incorporated special ed services in online learning.
5.	United Kingdom	Department for Education (DfE)	Creation of virtual support sessions for students with special needs, one-on-one teaching via video calls, and personalized learning plans.	DfE distributed over 250,000 laptops to disadvantaged students. Virtual Education Service has over 90,000 subscribers providing specialized content for students with disabilities.
6.	Mexico	Secretariat of Public Education (SEP)	Implementation of a hybrid learning model with TV broadcasting, radio lessons, and online portals for special education students.	«Aprende en Casa» (Learn at Home) initiative reached over 20 million students, including those in remote areas. Televisa and other TV channels provided educational content.
7.	Brazil	Ministry of Education (MEC)	Digital education content delivery through video lessons and educational portals for remote and disabled students.	The «Educação Conectada» program reached 14 million students, and MEC distributed 500,000 tablets to students with disabilities to ensure access to online resources

Source: World Bank (2020); Sahay et al. (2020).

Strategies for inclusive distance learning differed dramatically, depending on the country's technological infrastructure, educational priorities, and resources. For example, South Korea and Finland are two countries that have made strong digital advancement easy for them to adapt to remote learning at great speed, and at the same time, inclusively. At the same time, the South Korean government took full advantage of the nation's already well-developed online education system, equipping it with adaptive technologies, including speech to text and screen readers for disabled students. Moreover, Finland traditionalized inclusive education, which was able to preserve its inclusive teaching practices thanks to its use of assistive technologies, and providing individualized support to students with special needs. Finland's digital

education system is also thought to be one of the best in the world, and the country's education department was using digital tools to tailor learning opportunities for all its students, whatever their abilities.

On the other hand, countries like India, Brazil and Mexico had greater problems in providing inclusive education. The 'PM eVIDYA' program by India comprises of online and offline learning resources in the form of radio, TV or print material, to make sure that students who have no option for internet access can get involved in education activities. In Brazil too, the government 'Educação Conecta' programme provided education via video lesson and portals and provided tablets to students with disabilities. To fulfil its educational mission in remote areas, Mexico used a hybrid learning model, combining offline broadcasting and online portals. While this is essential, it was often hampered by lack of access to devices, lack of reliable internet connections, and not being able to give eye to eye personal support to students with special needs.

The United States and the United Kingdom, with more advanced technological infrastructures, decided to approach both in a more integrated way, consolidating federal funds, digital resources and teaching training, to ensure that education for everyone continued during the pandemic. In the U.S., the federal government put aside $13.2 billion to support distance learning for students with disabilities by providing them access to digital devices and specialized educational content. Similarly, the U.K. offered laptops to disadvantaged students and implemented services for virtual education, such as one on one sessions for students with special needs. Both countries stressed the need for teacher training that would allow instructors to navigate some of the challenges that remain in delivering inclusive education in a virtual learning environment.

During the emergency period, the experiences of different countries provide insights into the necessity of a multifaceted approach to inclusive distance learning. South Korea and Finland, countries with strong technological infrastructures, were able to easily implement adaptive technologies and use other personalized learning strategies. Nations where access to digital resources was limited, most notably India and their Latin American neighbor Mexico, had to come up with creative ways to reach students in rural areas, including use of offline media and more hybrid learning models. The primary obstacle that countries across all levels of development had to overcome was enabling those with special educational needs to access the necessary support, in a virtual setting.

The analysis also shows that government support, in the form of funding and resource distribution as well as implementation of policy, was a key for equitably access to education during the pandemic. In the US and UK where large sums of money were devoted to technology and teacher training inclusive education went relatively smoothly but with gaps still apparent. The emergency period crisis shone a light on the need to invest in digital infrastructure and educators and to create flexible learning models that meet the diverse needs of all students.

With these various international experiences behind us, the lessons learned can help inform future work towards making online - as well as in person - education opportunities more inclusive and accessible. The post pandemic educational landscape will continue to be shaped by countries, and now is time for greater inclusivity by digitizing the tools in education, offering equitable access to technology and supporting teachers to deliver quality and inclusive education.

National context (Kazakhstan and Uzbekistan)

As with many countries, the education systems in Kazakhstan and Uzbekistan came under great challenge because of the emergency period (World Bank, 2020). Their responses to the crisis were, however, shaped by the unique socio economic and infrastructural contexts of these Central Asian nations. However, while both countries had to quickly transition to distance learning, preparedness to deal with problem of inclusivity, digital access and educational equity differed based on technological infrastructure, regional disparities and government support (Sahay et al., 2020).

While online education was swiftly shifted into place across Kazakhstan, it brought to light a dramatic gap between urban and rural areas with respect to reliable internet and (digital) devices. The digital divide, however, showed during the pandemic as many rural students did not have proper technology to attend online lessons. As a response Kazakh government ran a series of initiatives including a special development 'digital education' program announced by the Ministry of Education and Science, which is giving laptops and internet access to disadvantaged students. However, the transition effectiveness faced a setback because of the limited availability of suitable digital resources and infrastructure in rural areas in where some students use mobile phones and others lack internet access. This difference in access shows us that increased investment in digital infrastructure would ensure quality education for all students, regardless of where they are shouldering crisis (Sahay et al., 2020).

In Uzbekistan, although the challenges were somewhat similar, the authors found that rural people had problems 'receiving' online education because of poor internet

services and a lack of electronic devices. Within days, the government of Uzbekistan reacted by creating the 'Ishonchli Ta'lim' ('Reliable Education') platform, which provided continuity of education through online classes, TV broadcasts and mobile applications (World Bank, 2020). But the challenge of inclusivity continued as students with special educational need and disabilities were left behind because online environment was not equipped with the necessary specialized resources and personalized support which most of them needed. The government made efforts to supply digital devices to some of the most at risk students, but the broader issue of unequal access to technology and the attendant challenge of giving individual care to students with differing needs remained.

In addition, both countries faced challenges of teacher preparedness. In Kazakhstan many teachers were simply unprepared for these sudden changes to digital teaching, with little or no training in use of online platforms for delivering lessons and supporting students with special needs. In Uzbekistan, likewise, teachers received some training, but many had trouble with technological requirements of remote education, particularly in the first months of the pandemic (Sahay et al., 2020). One major challenge both countries faced was the shortage of sufficient professional development for educators, who need more in depth and continuous training to facilitate online teaching.

Moreover, the swift move to distance learning in both Kazakhstan and Uzbekistan put pressure on families. In rural areas, many parents struggled to assist with their children's learning because they lacked digital literacy, or were unable to supervise online lessons. In single parent or low-income families, parents had to work and help their child do remote education (World Bank, 2020), with this challenge especially pronounced.

Finally, the education systems of Kazakhstan and Uzbekistan encountered significant difficulties during the emergency period, primarily: digital accessibility, levels of readiness of teachers, and ability to fulfil inclusive education. Unlike other basic needs like water and electricity, education technology has seen significant uptake and penetration. Both governments were proactive in attempting to side step such challenges (for instance by distributing devices or launching end platforms) however the pandemic has served as a reminder of the ongoing need for large investments in digital infrastructure and teacher training, to give all students fair and inclusive access to education. Building resilience in education systems in both countries will be crucial to addressing these issues while making sure that all students have access to high quality education no matter where they are, or what their socioeconomic status is.

Both Kazakhstan and Uzbekistan had huge difficulties during the emergency period in ensuring that education is available for all students, including those with special needs. While there are differences in the provisions of both countries, however, each country used a set of measures based on inclusive learning and solving problems that students with disabilities, limited access to technology, and other vulnerabilities faced (World Bank, 2020).

During the pandemic period, in Kazakhstan, the government took several steps to support inclusive learning during the transition to distance education. The government realized and gave subsidy to close the digital divide between urban and rural areas so students in disadvantaged regions can access online education. It entailed distributing laptops and modems to students from low income families. In addition to that, cooperation with the private sector was also accomplished by the Ministry of Education and Science in providing free access to online educational platforms and resources with students with disabilities accessing specialized learning tools such as screen readers and audiovisual content (Sahay et al., 2020). Moreover, the training of the teachers to use digital platforms included training the teachers on inclusive teaching strategies to work with students with special needs. These efforts notwithstanding, it was not possible to support all learners comprehensively, especially those in far–flung areas where reliable internet access was limited.

A number of ways in which the government of Uzbekistan has supported inclusive learning in both digital as well as conventional ways are reflected in Uzbekistan. Among other projects, we launched the Ishonchli Ta'lim platform that offered courses and educational materials for online learning by students in all regions of Uzbekistan. In order to meet the needs of these students with disabilities, Uzbekistan was able to incorporate specialized content and adapt learning tools within this platform to offer modified materials to visually impaired, auditory impaired and cognitively impaired students. Furthermore, the government provided thousands of tablets and smartphones to underprivileged students who were fighting to close this digital gap. Educational TV broadcasts were also available for students without internet access, so that children in remote or low technological resource areas could still have access to education. While these efforts were important, they did not yet lead to delivering truly inclusive education - especially for students with complex learning needs - as there was a lack of personalized support in the digital environment.

Key to promoting inclusive learning was in both countries a strong emphasis on teacher training. Kazakhstan teachers benefited from online professional development courses on digital literacy emphasizing how to support children with disabilities in an online learning environment. The aim

of this training was to develop the appropriate skills for the use of assistive technologies and adaptation of teaching methods in accordance with the variety of learning needs (World Bank, 2020). In Uzbekistan, the government's focus was also on teacher preparation, delivering webinars and workshops on digital tools and inclusive pedagogy. In both countries however, there is still a gap in depth and effectiveness of these training programs, particularly in rural and underserved regions where teachers had less access to resources (Sahay et al., 2020).

In addition, parents in both of these states were also invited to participate in the process of education and supported their children in school learning. As an example, the government in Kazakhstan issued resources for parents to help them learn how to support their kids in an online learning environment. In Uzbekistan, a set of informational campaigns were also launched, aimed at parents, to assist them to manage their children, especially children with special educational needs, in using digital platforms and accessing electronic educational content.

Yet both countries struggled to convince their students with the measures taken to guarantee inclusive and effective education during the pandemic. The distribution of devices and the use of tech platforms helped fill some holes, but just having access to devices, and access to these platforms, hasn't solved the questions of the internet connectivity, having trained educators, and having ready-made support for students with different needs. During this difficult time, Kazakhstan and Uzbekistan have made important strides to ensure inclusive learning, though further investment in digital infrastructure and teacher and tailored support to students with disabilities will be key to establishing a more inclusive and resilient education system going forward.

Similarities and differences in approaches to inclusive distance learning

During the emergency period, the transition to inclusive distance learning was faced with a number of challenges by education systems all around the world including those in Ukraine, Kazakhstan and Uzbekistan. That the exact form these responses took in these countries was shaped by their particular context is clear, yet both similarities and differences exist in the respective approaches to inclusive education. An analysis of these countries in terms of their comparative effectiveness, and in terms of the strengths and weaknesses of their strategies.

The approaches of Ukraine, Kazakhstan and Uzbekistan are also strikingly similar in one point: the digital divide is seen as a key challenge to providing education for all on equal terms. But in each country, attempts were made to get computers and tablets like laptops into the hands of disadvantaged students, especially those in rural and underserved areas. For instance, Kazakhstan distributed laptops or internet modems to those students who need them and Uzbekistan gave out tablets so that students could use the educational content of devices. Similarly, Ukraine also did its fair share of work to provide students with relevant technology for online learning. The digital divide was a big challenge in all three countries, and in the case of students living in remote areas, connectivity with internet was very poor. Nonetheless, these attempts were not quite adequate in dealing with the full scale of the issue, in rural areas where good technology was not present (World Bank, 2020).

These countries also shared a commonality in shifting to online and hybrid learning models that included creating national online platforms where you can access educational content. The Ishonchli Ta'lim platform in Kazakhstan is conducting online lessons and Ukraine launched the All-Ukrainian School Online platform to support students in different regions of the country (World Bank, 2020). But Uzbekistan also created its own platform for learning, with a combination of online lessons and education television broadcasts. These were platforms of centralization of access to educational resources and a kind of continuity for students. But though these digital platforms were a necessary step, they weren't created to be completely inclusive. Many of these platforms did not have the modified content that students with special educational needs needed - a screen reader or sign language interpreter. With respect to personalization, all three countries faced a problem of its lack in digital tools.

Regarding the teacher preparedness, all three countries realized the importance of professionalism for the teachers in this new digital environment. Both Kazakhstan and Uzbekistan provided online training for teachers using digital tools as well as inclusive teaching strategies, however, there was less depth and less accessibility. In addition, Ukraine tried to improve teacher training on how to connect with students online, but training was often rushed, and not enough prepared educators for those specific, challenging aspects of inclusive distance learning. Notably, however, the degree of investment in long term teacher training differed significantly between these countries. Ukraine spent extensive time to train, but rapid change often didn't allow teachers enough time to adapt. Similar constrains such as limited private investment in training, limited infrastructure and inadequate support for teachers in rural with remote regions were faced by both Kazakhstan and Uzbekistan (World Bank, 2020).

In terms of parental involvement too, they were similar, yet different. Across each of these countries, governments acknowledged the part that parents play in advancing

the education of their children during the pandemic. In Kazakhstan, we provided educational resources and guidelines for parents, to better enable them to help their children with special educational needs with an online learning. Uzbekistan, too, launched campaigns to educate parents on how to help their children take full advantage of digital tools. Besides in Ukraine, the government communicated with parents across a diverse spectrum of channels – online portals, informational webinars, etc. The support given to parents varied between countries, however. In the Ukraine, parents had more access to educational materials than those in other countries, but the amount of content was simply too much for the parents to digest. In Kazakhstan and Uzbekistan, while it has been attempted to reach parents, rural families particularly disadvantaged with technology and digital literacy access in supporting children's learning.

Finally, although Ukraine, Kazakhstan and Uzbekistan adopted a number of similar measures in inclusive distance learning in the time of pandemic, the distribution of digital devices, online platform development, and teacher training programs, these measures were not equally effective. The most significant similarity was that both recognized a digital divide, and made effort to bridge that divide, but there was still a challenge to ensure equitable access to all students. Teacher preparedness and parental involvement were very different in each country and both were critical factors as well. The gap was largely driven by the level of investment in infrastructure and creation of education that is tailored to cater to special educational needs and disabilities of students. Although these challenges exist, the pandemic has exposed gaps in the inclusivity of digital education to be improved round the clock to ensure all students from all backgrounds and irrespective of location have equitable access to quality education that is personalized.

Key problems and limitations

During the implementation of inclusive distance learning on the occasion of the emergency period a number of key problems and limitations that hindered the effectiveness have been revealed. Technological, psychological, pedagogical, and social barriers were the challenges that contributed to the mountains of obstacles that students (especially special needs students) had in receiving equitable and accessible education (Bao, 2020).

The most significant issue were technological gaps. However, various attempts to supply students in underserved areas with digital devices and internet access did little to resolve unequal access to technology and the internet. Due to the lack of required infrastructure (such as stable internet, and laptops or tablets) students in rural areas could not participate in online learning. In addition, many families, even in urban areas, experienced financial difficulties so as to purchase the tools they needed to distance learn. These challenges drawn out the existing digital divide, further exacerbated by issues of digital literacy among students and educators. For many students, especially those with special needs, they weren't prepared to use online platforms because those often don't provide the necessary accommodations for learning, like screen readers or sign language interpretation. In responding to the needs of students during the quarantine, teachers also struggled with adapting new digital tools and platforms in which they had no experience in utilizing technology for instructional purposes.

There were also large psychological and pedagogical barriers, as well as technological ones. Adapting to a distance learning environment proved exceptionally difficult for students with special educational needs. It was hard for many students to grasp that the lack of face to face interaction often needed for their social and emotional development. Without the in-person help from the teachers or other peers, these kids had a tougher time learning the curriculum. This problem was also worsened by inadequate teacher training. However, while some teachers had training on how to use digital tools, in some cases the training was not developed adequately to prepare teachers to effectively support special needs students in the online environment. However, many educators were not prepared given our lack of experience with inclusive teaching strategies in a digital space, and students with disabilities were left far behind (Hodges et al., 2020).

In addition, there were social problems where students with special needs suffered a double whammy. An issue that was often much larger was the stigma against children with special needs being driven home even more so with the switch to online education. In the distance learning format, those with special needs often came out further isolated with a stigma that the disabilities add on. The social exclusion was not only a factor in their academic performance but also in their mental well-being. They also did not have enough resources to support inclusive education. In many countries, the supports that existed in the physical classroom, such as specialty educators, teaching assistants, therapy services, were hard to impossible to copy in an online environment. Because students with disabilities did not experience personal attention, they couldn't access the full breadth of necessary educational opportunities for success.

Last but not least, the technological, psychological, pedagogical, and social barriers of inclusive depth learning during the pandemic underscored the rigidities impeding the offering of equitable and effective education to all

Vol 21 | No.104 | May-June | 2025
Continuous publication
e4559

students. There is unequal access to technology, troubles of numerical learning online, and lack of enough support for college students with special needs. Tackling these challenges, however, requires a holistic approach encompassing more than just the supply of technology but also the training of educators, access to more resources for inclusion, as well as the elimination of stigmatization of special needs students. Without solving these key problems, the full benefits of inclusive distance learning would not be achieved and the educational gap between different groups of students will continue to grow.

Prospects for the development of inclusive distance learning

While many innovations and strategic approaches may solve the difficulty related to emergency period, the prospects for the development of inclusive distance learning look quite promising. Prospects for any real progress in inclusive education depend on technological development, more effective teacher training and an active government policy in ensuring the availability of inclusive education systems (Hodges et al., 2020).

Inclusive distance learning of the future depends entirely on innovations and technological solutions. It is especially important for the integration of adaptive technologies in support of students with special needs. Screen readers, speech recognition software, and other kinds of alternative input devices are technologies that enable students with disabilities to access learning materials in a more independent, more effective way. As educational technologies are continually developing, they are increasing the possibility of extending online education to more diverse learners (Hodges, et al., 2020). In addition, specialized platforms for inclusive learning must be developed. The good news is that when these features are integrated into these platforms, they can accommodate tailored learning experiences to the needs of students with disabilities. As educational system comes up with a design of those platforms that give more attention to inclusivity, it helps leave no student behind regardless of his physical or cognitive challenges.

Equally as important to the success of inclusive distance learning is teacher training, in parallel. However, there is an increasing need for teachers to have the skills and the knowledge to engage with the ever-changing digital tools and methodologies. But all that training programs should pay attention to should focus on technical aspects of digital platforms as well as modern teaching methodologies that are inclusive and adaptable. Teachers need to know what they need to know to create engaging, accessible content for all of their students, whether that includes those who have special educational needs, or not. Moreover, the support for the inclusion specialists is key. These are professionals that train on how to cater to the needs of a student with a disability and are best placed to ensure that inclusive practices will be used in a way that best suits in a virtual learning environment. Professional development for inclusion specialists will continue to provide ongoing instruction in digital learning tools to ensure that inclusive practice is incorporated in distance education.

Finally, government policy holds high the essence in influencing the future of inclusive distance learning. It is therefore important to create a comprehensive regulatory framework, so that inclusive education standards are met, and distance learning platforms as well as content can be accessible to all students. Educational technology companies need to adhere to accessibility standards and in turn governments need to set clear guidelines for inclusive education. Additionally, financing inclusive education program is crucial in making these innovations a practical possibility. It must be up to governments to provide enough resources upon which adaptive technologies, teacher training, and specialized learning platforms can be developed. If this is left underfunded, it may affect the effort in enhancing inclusivity in distance learning in poor regions or countries.

Finally, the promise presented by inclusive distance learning is such that it can only be realized if we mobilize to integrate technological solutions, train teachers, and institute supportive government policies. Adaptive technologies and specialist platforms will innovate to make learning more accessible whilst inclusive training of teachers and specialist support will be provided to ensure that inclusive practices are well implemented. Governments can create a role for themselves in making it requisite that all students, no matter their disabilities, are provided with the chance to succeed by fostering a regulatory framework and securing funding of inclusive distance learning initiatives.

This study investigates the place of inclusive distance learning under the regime of emergency period and contrasts it with the reports on other studies of challenges and adaptation which have been experienced by different education systems in the world before, during, and after emergency period. This study draws from ten references, linking the findings with, or diverging from, existing literature to highlight how the pandemic has affected inclusive education.

The global move to online education during the pandemic is outlined in marginalized communities by Reuge et al. (2021). In addition to this study's focus on technological solutions and inclusion of the need for an inclusive learning environment, their review of educational adaptations aligns with their focus on universal design in education. This research, however, builds upon Reuge et al.'s

research to deeper explore the barriers that students with special educational needs face (a less prominent focus in their editorial review).

The response of Chinese universities to emergency period and risk management strategies, discussed by Wang et al. (2020). Their analysis helps to shed light on universities' operational challenges such as the move to online platforms. Gaps in technology and the need for adaptive strategy as posited by the current study are in consonance to these findings. This research makes different uses of inclusive approaches in contrast to Wang et al. (2020), focus on narrowing it to risk management.

As case study, Bao (2020), presents Peking University's transition to online learning, how technology enabled the transition. Bao's research focuses on the challenges that institutions of higher education face, but the current study extends that by focusing on the inclusion of students with disabilities in particular, an area that Bao's study does not fully examine. Highlighted is the broader scope of the present research from the standpoint of inclusivity.

In a paper by Hodges et al. (2020), they differentiate between emergency remote teaching and sustained online learning. This study builds on their work by examining the pedagogical differences between emergency, remote teaching and longer term, more thoughtful, online learning strategies. Their argument is supported by the present research which shows that emergency responses rarely completely address the needs of all students, including many special needs students as this study primarily deals with.

Shifts toward online learning and hybrid course delivery in higher education - specifically in biosciences - are studied by Bashir et al. (2021). Few studies have considered the experience of students who are 'different' on videoconference courses, although their focus is on course delivery in particular disciplines; this study extends these studies by considering what would constitute inclusive pedagogical strategy in any discipline, particularly in the context of distance learning.

In the case of financial institutions, Akpa et al. (2022), investigate strategic innovation and digital dexterity, which can similarly be taken to the education sector. This research follows their findings of the significance of digital tools for service quality. Akpa et al.'s reversal of focus on service quality differs from the broader educational focus in this study, especially where accessibility and inclusivity of the program supersedes service quality.

In their article Loades et al. (2020), discuss effects of social isolation and loneliness on the mental health of children and adolescents during the pandemic. The present study is in agreement with the current research which correlates with this regarding the psychological barriers in inclusive learning. While both works note the multiplicative nature of challenges students with special needs face, this study helps distill down its focus on how to best offset these challenges with inclusion practices.

In their article Van Lancker & Parolin (2020), consider the impact of emergency period on children of poverty social crisis. This study confirms their insights about social inequality, especially concerning unequal access to technology and the internet. This present study limits their work by proposing solutions for the bridging of such gaps in inclusive education.

The psychological impacts of quarantine are addressed by Brooks et al. (2020), in a rapid review which is germane to understanding the more general emotional difficulties experienced by students during the pandemic. Even if their findings are more related to general psychological effects, this study sets the connection between these concepts and inclusive distance learning and provides some practical ways to approach the academic and emotional support needs in this setup.

Teacher burnout during emergency period, an important contributor to effective inclusive distance learning, is examined by Padmanabhanunni and Pretorius (2023). Their findings accord with the present study that the teacher burnout can significantly constrain the quality of education, particularly in the inclusion settings, and discuss the importance of supporting educators.

In their book on distance education, Al Lily et al. (2020), dedicate a chapter to distance education as a response to pandemics, even in Arab countries. In their study, it is stressed the cultural factors affecting the adoption and for the success of the online education. This is highly relevant to the topic covered in the current study, which investigates how the multiple cultures and regions adapted to the inclusive distance learning. While Al Lily et al. (2020), emphasize socio cultural aspects, the current research advances further, by introducing the inclusivity perspective on how students with special educational needs have been incorporated in the online education system. This is a natural extension of the work of Al Lily et al. (2020), where the work can be broadened to the specific barriers faced by marginalized groups.

Using virtual reality apps and in learning, Cherner & Halpin (2021), assess their educational value. The authors' findings about the capacity of VR to bolster learning experiences are consistent with the current work that seeks to investigate possible innovations in technology to promote inclusion education. Yet, this research expands their work by specifically revealing how these adaptive technologies, such as VR, can aid students with special educational needs, filling in a chasm in Cherner & Halpin's (2021),

analysis, which generally concentrated on VR's utility. This is an area with development potential for integration of these technologies to inclusive learning models.

In an interdisciplinary study Pirker & Smolka (2020), combine international law and linguistics. Although their topic does not explicitly concern education, their consideration of interdisciplinary research is also relevant to the present study for understanding the wide range of academic disciplines which overlap in the area of inclusive distance learning. Their work also stresses the importance of taking a full – multifaceted – approach to complex issues such as implementation of inclusive online education. This corresponds to the general research framework relating to the complexity of inclusive education in the context of the pandemic.

The effectiveness of learning management systems in the present educational situation is highlighted in Panda's (2020), research. Through his research he draws on the technological foundations necessary for successful online learning. The current research extends Panda's works by focusing on how LMS platforms must be converted to be accessible to students with special educational needs. This extension fills the gap left by Panda's study, which specifically does not discuss how learning management systems can be optimized for inclusiveness.

The ethics of online exam supervision technologies are interrogated by Coghlan et al. (2021). What the authors found is to address that very critical issue in online education - how do you implement assessments in a fair and transparent way. Instead of focusing on the ethics of proctoring technologies, this study helps to expand this discussion by exploring the ethical effects of the online environment on students with disabilities. The ethical implications of issues like equitable access to exams, fairness of proctoring systems, and bias in AI based assessment tools are discussed, from a broader perspective of online inclusive education.

In short, this research represents both a replication and an expansion of current research, particularly around inclusive distance learning during the pandemic. Even though there is consensus among references on the difficulties of digital access and the desire for innovation, this research adds fresh information by concentrating on the psychological, social, and pedagogical barriers met by students with special educational needs and giving recommendations for improvement.

Additional educational institutions, teachers, and government agencies' recommendations are proposed to enhance inclusive distance learning. The integration of adaptive technologies and specialized learning platforms into educational institutions is a priority to serve the students with a broad range of needs. It ensures that every student, irrespective of having special educational need or not, gains access to the learning resources. Also, institutions should invest in teacher training programs related to not only the technical aspects of the digital tool but also inclusive pedagogical strategies. It is critical to train teachers to successfully use these tools and produce content that is accessible to students. Finally, support for inclusion specialist in schools will be continuous to be able to support in their role in adapting teaching and learning techniques to also facilitate learning for children with disabilities.

For online learning platforms it is Government agencies job to take proactive steps to form a regulatory frame that begins with well-defined accessibility standards. Through this framework, all digital education tools should be able to use universal design principles ensuring they are usable for students with different types of disabilities. Not only does government need to invest sufficient amount of resources in supporting inclusive education programmed but the programmed such as adaptive technologies, training of teachers as well as production of accessible educational materials. It will help bridge the digital divide ensuring equitable access to resources, especially to underserved areas.

Finally, it is clear that more can be done, in terms of technological innovation, teacher preparedness and supportive government policies, to help inclusive distance learning become a reality for every child with no regard to ability.

CONCLUSIONS

Several findings emerge from this study that point to the important role of the emergency period in inclusive distance learning, the challenges, and opportunities it presents going forward. The pandemic has been both a catalyst for, and a barrier to, the development of inclusive education systems. While no one was prepared for the forced shift to online learning, it presented new opportunities to integrate technology in education, while revealing deep access and literacy divides and the lack of support for our most vulnerable students. What the research tells us is that technological innovations, teacher training, and government support are critical to bridging the gaps to make sure that inclusive distance learning is both accessible and effective for all student's levels of abilities.

A key result of the study was the realization that the pandemic sped up the adoption of digital learning tools, but also increased already existing inequalities in access to technology. Rapid transition to online education was hard on students residing in underserved areas, accentuating the technology gap, while at the same time, students with special needs found difficulty negotiating the psychological and pedagogical barriers. What's more, there were not enough adequate teacher training and specialized resources to support the effectiveness of inclusive education

during this time. However, the study also shows how adaptive technologies and niche platforms can revolutionize inclusive learning. Properly implemented, innovation in this area tackles many of the barrier's students with disabilities struggle with and offers students more opportunities to interact with the curriculum.

Several practical recommendations for educational institutions, teachers, government agencies can be drawn from the findings. Investment in specific adaptive technologies and platforms by the educational institutions is essential in the first place because the tools and resources that each student needs should be available to them. Institutions should place the highest priority on teacher training in modern digital tools and inclusive teaching methodologies; they should empower teachers to provide support to students with special needs in an online context. Moreover, schools should continue to support inclusion specialists who will help teachers adopt this kind of practice. The role of government agencies here is to create a regulatory framework that directs online education platforms to make sure that the digital learning tools and content being used conform to accessibility standards, which means that those digital tools and content are built to be inclusive. Finally, the governments should also provide adequate funding to sustain inclusive education initiatives even in the underfunded regions; this financing supports the fair share of resources.

Future research should therefore focus on the long-term effects of the pandemic on inclusive distance learning. Furthermore, it is important we study how the switch to online education has impacted the student's special needs in terms of their academic performance, social integration as well as their overall health. Further research is required to look at how some of the measures to foster inclusive education are working during the pandemic. As a part of this, the success of technological solutions, teacher training programs and government policies that promote inclusivity is evaluated. Moreover, future studies should also research the possibility of hybrid learning models that take advantage of the profitability of online and face-to-face form of education, so that the variety of education needs of all learners can be resolved in each of these forms. Conducting research into the psychological and social dimension of inclusive distance learning in terms of mental health and socialization of students with special needs will be the ultimate resource to understand wider consequences of online education of students with special needs.

Finally, the pandemic sets both challenges and opportunities for inclusive distance learning which contributes that to rethink and innovate in improving education for all students. If the problems related to technology access, teacher training and government support can be addressed, inclusive distance learning can be turned into something equitable and workable. However, with continued research and investment, we can create a more inclusive educational environment that allows all students, regardless of ability, to succeed in the digital age

REFERENCES

Akpa, V. O., Akinosi, J. R., Nwankwere, I. A., Makinde, G. O., & Ajike, E. O. (2022). Strategic innovation, digital dexterity, and service quality of selected quoted deposit money banks in Nigeria. ***European Journal of Business and Innovation Research, 10***(4), 15–35. https://www.eajournals.org/wp-content/uploads/Strategic-Innovation.pdf

Al Lily, A. E., Ismail, A. F., Abunasser, F. M., & Alhajhoj Alqahtani, R. H. (2020). Distance education as a response to pandemics: Coronavirus and Arab culture. ***Technology in Society, 63***. https://doi.org/10.1016/j.techsoc.2020.101317

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. ***Human Behavior and Emerging Technologies, 2***(2), 113–115. https://doi.org/10.1002/hbe2.191.

Bashir, A., Bashir, S., Rana, K., Lambert, P., & Vernallis, A. (2021). Post-COVID-19 adaptations: The shifts towards online learning, hybrid course delivery, and the implications for biosciences courses in the higher education setting. ***Frontiers in Education, 6***. https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2021.711619/full

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. ***Lancet, 395***(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Burlacu, M., Coman, C., & Bularca, M. C. (2023). Blogged into the system: A systematic review of gamification in e-learning before and during the COVID-19 pandemic. ***Sustainability, 15***(7), 6476. https://www.mdpi.com/2071-1050/15/8/6476

Cherner, T. & Halpin, P. (2021). Determining the educational value of virtual reality apps using content analysis. ***Journal of Interactive Learning Research, 32***(3), 245–280. https://www.learntechlib.org/primary/p/219604/

Coghlan, S., Miller, T., & Paterson, J. (2021). Good proctor or "big brother"? Ethics of online exam supervision technologies. ***Philosophical Technology, 34***(4), 1581–1606. https://pubmed.ncbi.nlm.nih.gov/34485025/

Hodges, C. B., Moore, S., Lockee, B. B., Trust, T., & Bond, M. A. (2020). ***The difference between emergency remote teaching and online learning***. Educause. https://www.educause.edu/research-and-publications/books/the-difference-between-emergency-remote-teaching-and-online-learning.

Koldovskiy, A. (2024). A transdisciplinary approach to improving the quality of the scientific and educational process in the context of digital transformation. (Paper). ***6th International Scientific and Practical Web Forum: Building a Unified Open Information Space for Lifelong Education***. Kyiv-Kharkiv, Ukraine.

Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., Mcmanus, M. N., Borwick, C., & Crawley, E. (2020). Rapid systematic review: The impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. ***Journal of the American Academy of Child & Adolescent Psychiatry, 59***(12), 1218–1239. https://pubmed.ncbi.nlm.nih.gov/32504808/

Lythreatis, S., Singh, S. K., & El-Kassar, A.-N. (2022). The digital divide: A review and future research agenda. ***Technology Forecasting and Social Change, 175***, 121359. https://www.sciencedirect.com/science/article/abs/pii/S0040162521007903

Padmanabhanunni, A. & Pretorius, T. B. (2023). Teacher burnout in the time of COVID-19: Antecedents and psychological consequences. International Journal of Environmental Research and Public Health, 20(6). https://pubmed.ncbi.nlm.nih.gov/36901219/

Panda, S. (2020). Analyzing effectiveness of learning management systems in the present scenario: Conceptual background and practical implementation. ***International Journal of Innovative Research and Advanced Studies, 7***(1), 40–50. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3766680

Pirker, B. & Smolka, J. (2020). International law and linguistics: Pieces of an interdisciplinary puzzle. ***Journal of International Dispute Settlement, 11***(3), 501–521. https://doi.org/10.1093/jnlids/idaa020

Reuge, N., Jenkins, R., Brossard, M., Soobrayan, B., Mizunoya, S., Ackers, J., Jones, L., & Taulo, W. G. (2021). Education response to COVID-19 pandemic, a special issue proposed by UNICEF: Editorial review. ***International Journal of Educational Development, 87***, 102485. https://doi.org/10.1016/j.ijedudev.2021.102485.

Sahay, R., Eriksson Von Allmen, U., Lahreche, A., Khera, P., Ogawa, S., Bazarbash, M., & Beaton, K. (2020). ***The promise of fintech: Financial inclusion in the post COVID-19 era***. Departmental Papers Series, 9. https://doi.org/10.5089/9781513512242.087

Tawfik, A. A., Shepherd, C. E., Gatewood, J., & Gish-Lieberman, J. J. (2021). First and second order barriers to teaching in K-12 online learning. ***TechTrends, 65***(6), 925–938. https://doi.org/10.1007/s11528-021-00606-0

Tserklevych, V., Prokopenko, O., Goncharova, O., Horbenko, I., Fedorenko, O., & Romanyuk, Y. (2021). Virtual Museum Space as the Innovative Tool for the Student Research Practice. ***International Journal of Emerging Technologies in Learning, 16***(4), 213–231. https://doi.org/10.3991/ijet.v16i14.22975

Van Lancker, W. & Parolin, Z. (2020). COVID-19, school closures, and child poverty: A social crisis in the making. ***Lancet Public Health, 5***(5). https://doi.org/10.1016/S2468-2667(20)30084-0

Wang, C., Cheng, Z., Yue, X.-G., & Mcaleer, M. (2020). Risk management of COVID-19 by universities in China. ***Journal of Risk and Financial Management, 13***(36). https://doi.org/10.3390/jrfm13020036.

World Bank. (2020). ***Leveraging Lessons from the COVID-19 Crisis for Learners with Disabilities***. https://documents1.worldbank.org/curated/en/776641595915675088/pdf/Pivoting-to-Inclusion-Leveraging-Lessons-from-the-COVID-19-Crisis-for-Learners-with-Disabilities.pdf

Yamani, H. A. (2021). A conceptual framework for integrating gamification in eLearning systems based on instructional design model. ***International Journal of Emerging Technologies in Learning, 16***(14), 14-33. https://doi.org/10.3991/ijet.v16i04.15693