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## **E-learning challenges and opportunities for students with special needs during COVID-19 Pandemic**

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**Abstract.** This empirical study aims to discuss the impact of the COVID-19 pandemic on the learning process of the students with special needs. In this context, the study focuses on addressing the challenges and opportunities that should be taken into account by teachers, especially after the emergence of 'e-learning' (also known as 'distance education' and/or 'remote learning') era. The study further intends to identify accessibility barriers and challenges to learning for students with special needs in the context of remote learning. It also aims to recommend a framework that, in addition to specifying the challenges, suggest several systematic responses and recovery for these challenges for the special education sector's consideration. The study concluded that COVID-19 pandemic has made a substantial impact on the education sector. In fact, the pandemic has changed the way in which education is delivered. Students, parent or guardians, and teachers had to change the way they access, support or deliver education. The pandemic highlighted gaps in digital skills, adaptation of technology to teaching and learning.

**Keywords.** Students with special needs, special education, disabilities, COVID-19 pandemic, e-learning, perceptions, remote learning

### **Background of the study**

Nowadays, the world is witnessing an educational crisis with an unprecedented enormous threats (Saavedra, 2020). Since its outbreak in December 2019, the COVID-19 pandemic has caused nearly 1.6 billion students in more than 190 countries in all of the world continents to stop attending schools and other educational institutions. In fact, such closures were carried out as part of the precautionary measures taken by world's countries to reduce the spread of the virus. As a result, 94% of the students all over the world were affected, especially in low- and middle-income countries in which the percentage has reached 99% (The United Nations, 2020).

COVID-19 pandemic has imposed many effects on the public education sector in general, and the educational process in particular has faced a number of challenges due to the distance learning system, or blended education, especially for students with special needs. The obstacles that cannot be ignored is that students with special needs face are due to many factors such as the lack of necessary equipment, internet access, and support that would allow them to pursue programs through digital education.

According to UNICEF (2021), the world is facing an education crisis due to COVID-19 lockdowns. Attending school is a right to every child as it focal for child's development, safety and well-being. Yet in too many countries classrooms remain closed. With schools' closures, the cost on students' learning would lead to a devastating consequences including the reduction of the students having physical activity, an increase of anxiety level among the students and self-harm. It also had an impact on the parents and on the whole community. However, taken all possible measures to reopen schools became a priority for the world governments to avoid any negative impact on the future of the world's children. On the other hand, UNICEF's report indicated that some students have been able to access remote learning during school closures, but many of them have struggled due to a lack of support. At least a third of the world's schoolchildren had no access to remote learning at all, especially students with learning disabilities, i.e., students with special needs (ibid).

Learning disabilities is a general concept that refers to a heterogeneous group of disorders represented in a significant degree of difficulty in acquiring and using any of the skills of listening, speaking, reading, writing, arithmetic, and judgment. These disorders are related to internal problems in the individual that can be attributed to a functional deficit in the central nervous system. Although learning difficulties can be accompanied by other difficulties or disturbances (such as sensory difficulties, mental retardation, or behavioral problems), or undesirable environmental effects (such as insufficient educational opportunities, cultural differences...), they are not a consequence of them (Ismail, 2021).

As for the types of disabilities, they can be temporary (such as a broken arm), relapsing and remitting, or long-term. Other types of may include: hearing loss, low vision or blindness, learning disabilities, such as Attention-Deficit Hyperactivity Disorder, dyslexia, or dyscalculia, mobility disabilities, chronic health disorders, such as epilepsy, Crohn's disease, arthritis, cancer, diabetes, migraine headaches, or multiple sclerosis, psychological or psychiatric disabilities, such as mood, anxiety and depressive disorders, or Post-Traumatic Stress Disorder (PTSD), sperger's disorder and other Autism spectrum disorders, and traumatic Brain Injury (Picard, 2015; Walters, 2010; May & Stone, 2010).

In order to ensure the continuity of education for school-age children throughout the world during the COVID-19 pandemic era, distance education process has been commenced through various technological tools and Internet-based education systems (Zhou *et al.*, 2020). In this context, online face-to-face lessons allowing attendance of many people and offline lessons on websites have been made available by taking advantage of modern education technology (Onyema *et al.*, 2020). However, infrastructure and technological savvy of teachers to use distance education tools functionally are important in the success of distance education. For example, China, with a strong technological infrastructure, is successful in providing distance education, but it is reported that some countries such as Vietnam and Mongolia struggle with difficulties in carrying out distance education process with low Internet networks, smartphones, or televisions. On the other hand, even before COVID-19, it was known that all students in the world did not have the same opportunities in terms of access to devices such as computers, tablets, and the Internet (Fry-Bowers, 2020).

### **Problem statement**

The COVID-19 pandemic has exacerbated the learning crisis facing the global educational system, and its impact on the generation of students is likely to continue for a long time. As mentioned previously, in April 2020, 94% of students globally (approximately, 1.6 billion students) have stopped going to schools, and about 700 million children are still studying

at home in an atmosphere of uncertainty, while families and schools consider a number of diverse options of distance education accordingly. For instance, at the height of the crisis, 220 million students in higher education, which is considered as a system of great importance to the growth of countries, were affected by the closure of universities (Albank-Aldawli, 2021).

In addition to its effect on the educational process, the pandemic has also affected young children, youth, and most importantly students with special needs in an unprecedented way (students with special needs, according to Tasneem (2020) are those who deviate from the average that characterizes ordinary students in mental or cognitive characteristics, sensory abilities, physical characteristics, neuromuscular or social behavior, emotional, or communicative abilities, as well as those with various disabilities, whose condition requires them to receive special educational services to develop to the best possible level of their abilities).

For Abed & Shackelford (2020), students with special needs or disabled individuals are defined as those who have visual impairment, hearing impairment, mental disability, physical and motor impairment, learning difficulties, speech and speech disorders, behavioral, and emotional disorders Autism, double and multiple disabilities, and other disabilities that require special care and rehabilitation.

However, it is too early to know the full impact of the deterioration in school enrollment rates due to the pandemic, but it is expected that the students with special needs to suffer significant losses now and in the future, and in the vast majority of countries, there does not appear to be a hope for a near end to this state of uncertainty and ambiguity. As a result, this generation of students with special needs may not be able to reach their educational goals in the future at all. Hence, an effective and rapid action is necessary to address these disparate learning losses, which is important moving forward so that these gaps do not widen.

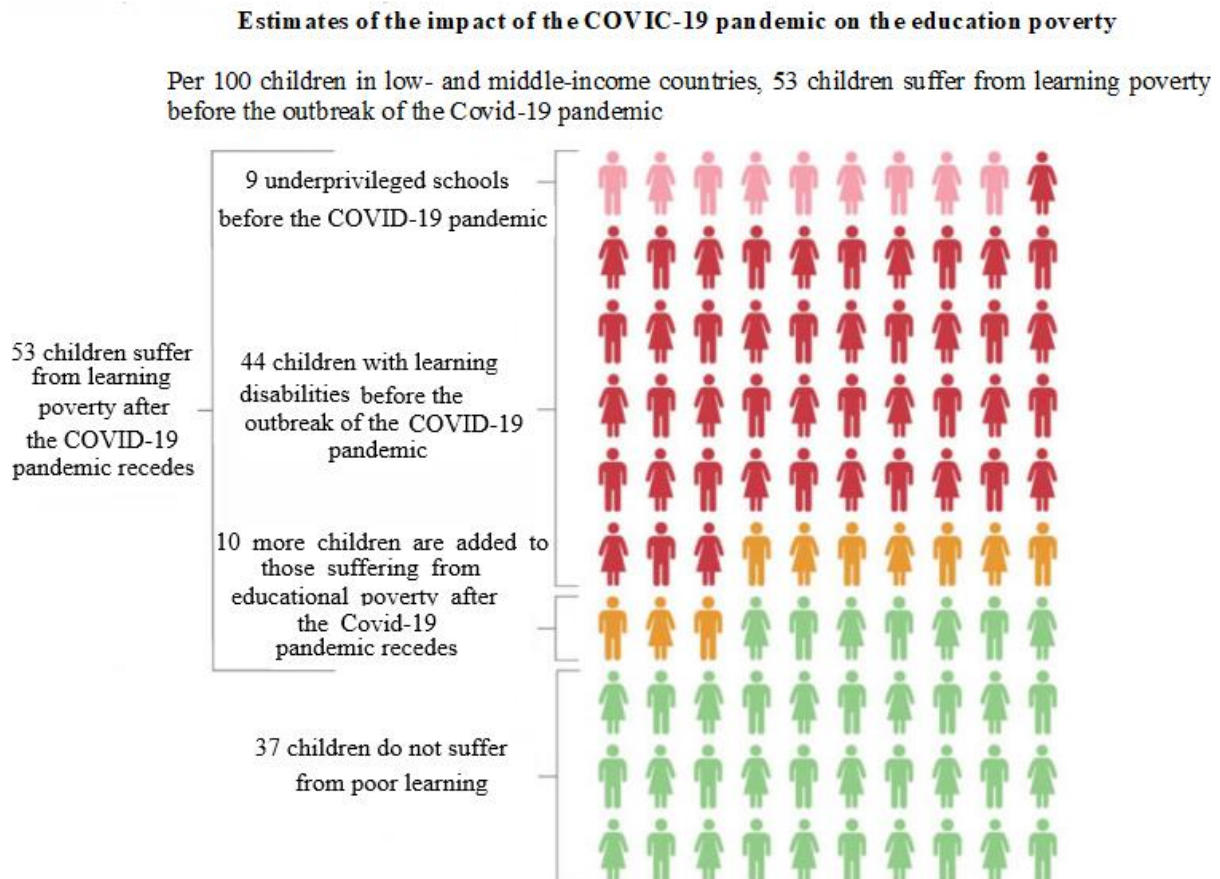
Abed & Shackelford (2020) confirmed that students with special needs or disabled individuals are still negatively impacted by limited educational opportunities during the COVID-19 pandemic.

### **Global educational systems and the pandemic**

In light of previous mentioned harsh challenges faced by many countries all over the world during the pandemic, some educational systems, but not most of them, were able to adapt to some changes, such as the closure of schools and the adaptation distance learning instead. On the other hand, due to the losses incurred by many countries, the educational sector has been affected, and one of the manifestations of its impact is the increase in the schools' dropout rates. In addition, this generation of students is at risk of losing about \$10 trillion in future income levels, or roughly 10% of global Gross Domestic Product (GDP), as countries derail from reaching the learning poverty eradication goals - potentially raising learning poverty levels up to 63 % (Azevedo., *et al.* 2020).

The World Bank (2020b in Azevedo., *et al.* 2020) stated that due to COVID-19 pandemic which have affect schooling attainment and learning process negatively through depriving over billion students from attending schools, this lead many countries to pursue various approaches in order to mitigate closure of schools. Simultaneously, most governments have been undergoing colossal economic contractions for the first time, and hence they started to reduce household incomes and public budgets (*ibid*). Besides, the pandemic has made the situation worse as it has been spreading economic recession globally, rising the unemployment numbers, reducing families' income, shrinking government fiscal space, as well as affecting international aid budgets.

Academically, many countries all over the world were already in the midst of a global learning crisis before the outbreak of COVID-19 pandemic. Such crisis, according to UNESCO, threatened the efforts of these countries to build human capital. Nevertheless, 53% of students in low- and middle-income countries suffer from learning poverty (World Bank, 2019). Figure (1) shows the estimates of the impact of the COVID-19 pandemic on the education poverty.



**Figure (1)** the estimates of the impact of the COVID-19 pandemic on the education poverty. (Source: Azevedo, J., P.; and Goldemberg, D. (2020). "Estimating COVID-19 Impact in Brazil. Country". Brief, EduAnalytix. In Albank-Aldawli (2021).

**Barriers encountered by students with disabilities and special needs during the Covid-19 pandemic**

Although the global shift and transition from physical to the online environment (online platforms) seemed a normal, however such transition cause different challenges and obstacles for the students with special needs and disabilities. Gundersen *et al.*, (2020). Coleman-Jensen (2020) and Rabbitt & Smith (2021) concluded that several aspects have caused different barriers and challenges for the students with disabilities and special needs as well as for their teachers.

COVID-19 pandemic has casted a dark shadow over the entire world, imposing great difficulties and additional challenge over students with special needs, especially with the transition of educational institutions from the regular education system to the e-learning system. Students with special needs faced various challenges in the distance learning process, the most important of which is the digital accessibility of electronic lectures, study materials and

electronic exams, in addition to the psychological, social and financial effects of the pandemic on them and their families. Above all, with the spread of the COVID-19 pandemic all over the world, everyone has been living a pattern of alarm and fear, and the poorest and most vulnerable members of society are the most affected by this pandemic. Although all members of society, including students, were affected, students with special needs faced greater challenges and difficulties, which affected their way of living and their lives turned upside down.

According to BBC (2021), while people with special needs, in the normal situation, suffer from marginalization and lack of attention, especially in Arab countries, the Corona virus crisis that is ravaging the world has cast great fears in the hearts of this large group all over the world, especially in the Arab region. The international human rights organization; 'Human Rights Watch', had stated in a previous report that the new Corona virus, which causes 'COVID-19', poses risks to many people with special needs around the world, and that governments should pay additional efforts to protect the rights of people with special needs and to respond to the pandemic. "People with disabilities are among the most marginalized and stigmatized groups in the world, even in normal circumstances," said Jane Buchanan, Deputy Director of the Rights of Persons with Disabilities Division at the international organization. In addition, according to Human Rights Watch, besides discrimination and barriers to accessing information, social services, health care, social inclusion, people with special needs have started to face challenges in terms of education during the pandemic.

One of the most important challenges facing students with disabilities and special needs in the field of education include: 1) facing discrimination and deprivation of education before and during the COVID-19 pandemic, and in light of the pandemic, their suffering and their families in the field of education has become greater; 2) there are no real and practical procedures by the concerned authorities (official and unofficial) that facilitate the process of accessing knowledge and information for students with disabilities and special needs and their families; 3) some schools offer the possibility of distance learning, but this is not available to everyone, particularly students with disabilities and special needs; 4) there are areas in where Internet services are not available, in addition to the inability of parents of students with disabilities and special needs to provide the necessary electronic devices to facilitate the process of communication and obtain information; 5) there is a high financial cost of e-learning for students with disabilities and special needs and their families; 6) the educational platforms that have been developed for students in general, do not take into account the presence of sign language interpreters, and are not prepared in Braille; 7) the inability of workers in the competent authorities to communicate with students with disabilities and special needs, to hear the problems they face in the learning process (Yaghy, 2021).

Catalano *et al.* (2021) demonstrated that in the era of the Covid-19 pandemic, students with special needs have been recognized with various difficulties due to e-learning because they were not able to have access to the resources required to access the learning material and they have not got sufficient support, including granting them with a significant level of skill-set that could be used accordingly for online learning skills, from their teachers as well as their respective educational institutes and hence their learning outcomes were limited. Actually, students with special needs could not grasp a sufficient level of understanding because their teachers were not able to design and develop on-line lessons that could be delivered accordingly. On the same line, Tonks *et al.*, (2021) added the teachers, during the COVID-19 era were not prepared and having a sufficient level of training of on-line teaching using technology that could allow them to utilize several techniques and approaches to teach students.

Gin *et al.*, (2021) asserted that ‘the stay-at-home orders manner’ that students with special needs represented another dilemma for those students because such manner causes adversely on their psychological and mental health which eventually can lead to students with special needs to lose their coping abilities with the uncertainties caused due to the covid-19 pandemic.

However, Human Rights Watch (2020) confirmed that in many countries, children with disabilities and special needs face barriers to accessing quality and inclusive education. With governments closing schools, many are implementing online education. Children with various disabilities and special needs may be excluded if online education is not available to them, including through adapted and accessible educational materials and communication strategies. Governments should also ensure that materials and study plans are made available in an accessible format for students who cannot connect to the Internet. Without government support, parents or caregivers may struggle to provide the full range of services their children might get in school. In Lebanon, for example, public and private schools are closed and lessons are online. Amer Makarem, director of the Blind Youth Association, told Human Rights Watch that teaching and distributing lessons online is generally not available to students who are blind or have low vision. Coronavirus can be catastrophic in environments such as refugee camps or other makeshift camps, where people live in close proximity and often lack basic services. People with disabilities in places like this face significant barriers to basic services such as shelter, water, sanitation and medical care, in countries such as Bangladesh, Central African Republic, Syria, Cameroon, Yemen and Greece.

Ziraldo (2020) mentioned that students with special needs face several barriers as a result of COVID-19 pandemic. Ziraldo commented on the risks that have been identified and the challenges that have arisen because of the pandemic that entails to carry out many procedures and plans to improve the responses. Ziraldo confirmed that more challenges are continue to be arisen such as: 1) organizational, policy and procedural barriers caused by (a) “inconsistent or unclear messaging from varying levels of government, health agencies and school boards, (b) lack of or unable to access consistent data from all regions and school boards to support data driven decisions and implement actions quickly and effectively, (c) policies and procedures outdated, non-existent, or inflexible to accommodate this type of emergency – COVID-19 pandemic (d) emergency response teams not reflecting the different subject knowledge needed to support decision making and development of a plan that reflects the needs of students with special needs, (e) inter-governmental, health service, service agencies and school board service agreements did not reflect the ability to provide services in a virtual learning environment, (f) service delivery models used by government, health services, service agencies and school boards not conducive to virtual service delivery, (g) the extent to which boards utilized or sought feedback from its Special Education Advisory Committees in developing response or action plans to the COVID-19 pandemic varied from none to fully participated, (h) not all school boards have an accessibility standards committee or for those school boards that do have members of the community or people with disabilities and special needs who have lived experience that can help plan and implement the public health guidelines to mitigate risks of COVID-19 in schools for students with disabilities; 2) academic (learning inequities for students with disabilities and special needs; 3) transitions between in school and virtual learning; 4) accessible communication and technology; and 5) training on the integration of digital technology into learning.

So, despite the expansion of the integration of technology in education during the COVID-19 pandemic in regards with students with disabilities special needs, and despite the

efforts made to improve pedagogical approaches, emphasizing the use of computers and technology to support efficient learning, and implement e-learning to achieve efficient learning outcomes (Alghamdi & Holland, 2020). Another difficulty faced this initiative which is the reluctance by some teachers to integrate technology while teaching students with special needs in the classroom (Babeley, 2016; Waight & Oldreive, 2020), due to their weak technical competence, insufficient teaching material, diminished control, and lack of time (Tallvid, 2016).

### **Teaching students with disabilities and special needs v.s. the implementation of e-learning**

As a reaction to the pandemic, and in order to secure services delivered to students with special needs, the infrastructure of special education has rapidly been developing by many governments to enable special needs students' opportunities through offering strategic support, planning, and initiatives (Al-Khalifa, 2010).

At the top of these initiatives is the implementation of e-learning for its outstanding impact on the learning outcomes of the students with disabilities and special needs, similar to other students. In fact, e-learning plays a significant role in equipping the teachers with the essential tools to retain and capture the interest of students with special needs (Babeley 2016; Waight & Oldreive 2020).

Collins (2020) stated that the concept 'e-learning' refers to the cognitive science principles formalized teaching and effective multimedia learning with the assistance electronic educational technology, which include various resources such as the internet and computers.

On the other hand, Ziraldo (2020) used the concept synchronous learning to refer to e-learning. Ziraldo mentioned that synchronous learning (AKA Distance Education/ Virtual learning/ Virtual education) is defined as a method of teaching or the instruction in an interactive learning environment in which the student and the teacher (who are separated by time or space) interact and communicate in a specific virtual place (the teacher provides courses of study online which does not require the physical attendance by the student at a school, i.e., it occurs in the absence of traditional classroom environments or face-to-face courses, through a specific online medium, at a specific time. Functionally and effectively, synchronous learning' course content includes digitally transmitting course materials to student, self-guided lesson modules, streaming video content, multimedia resources, virtual libraries, posted lecture notes, educational tools, and exchanges across discussion boards or social media platforms. In other words, the interaction is occurred via technologies that offers educators digitally-based solutions. synchronous learning plays a significant role in assisting the educators to create, store and disseminate content, plan courses and lessons and foster communication with the student.

The application of e-learning in the education system at all levels during the pandemic has been beneficial in various aspects as it enabled an increasingly student-centered learning setting through the transformation of procedures and practices in the educational life of the students with special needs (Collins, 2020), that is why e-learning is expected to be poised continuing in line with the continuation of the pandemic (Zimmer *et al.*, 2021). Correspondingly, Aljaber (2018) informed that e-learning is a fundamental and influential factor that greatly influence the special education sector through increasing its quality and reinforce the innovation and motivation of the students with special needs. It enhances teaching, learning, research, and the development process of the students with special needs and accelerate and enrich their comprehension and competency skills. Moreover, e-learning assist

students with special needs to relate their learning experience to the real world in a practical way.

A reference should be made to a critical point that is after the emergence of the pandemic and the radical decision to start of applying distance education applications, and although there was no education practices policies' plans in educational system's institutions for this era, however, remote learning has been starting to prove its potentials at all levels of education. As a result, teachers started to look for and adopt on-line teaching strategies through 'Zoom Platform' (distance education application) to give better recovery mode of teaching action and achieve a better interaction between themselves and their students.

Among the other barriers of the utilization of e-learning in the case of students with special needs during the COVID-19 pandemic are the following: 1) the consideration of disabled students' needs; 2) the variation of the understanding abilities of the students with special needs towards the e-learning system and their ability to interact with this system which differs from normal students (Alhabeeb & Rowley, 2018); 3) special needs students' inability to gain sufficient access to the technology and to handle various system security issues to make good use of this technology (Naumova et al., 2017). Actually, special needs students might face several issues such as being unauthorized to have access to certain information due to their poor ability to deal with the e-learning system (including their poor ability to deal with the systems access features such as the need for pin codes and passwords) as well as their weakness in memorizing information and retain adequate cognitive knowledge.

On this regard, a great deal of concern has been put on the challenges encountered by students with disabilities and special needs and e-learning opportunities for those students. In addition to the efforts paid by governments during the last two decades to incorporate technology, improve pedagogical approaches, and adopt new teaching methods and styles in education to improve and support efficient learning of the students with disabilities and special needs, such efforts have been also expanded during the COVID-19 pandemic.

Waight & Oldreive (2020) said that the implementation of e-learning is critical as it is proved that it plays a significant role in enhancing special needs students' behavior, learning skills, and communication during the COVID-19 pandemic. Therefore, most teachers advocate the use of online learning to teach students with special needs. In fact, teachers believe that this implementation as a continuation of the conventional teaching approach. Naumova *et al.* (2017) and Barker (2020) supported Waight & Oldreive's (2020) view through asserting that online learning has assisted special needs students in their curriculum during the pandemic. Naumova et al., added that e-learning held various advantages and benefits to students with special needs such as enhancing the teaching and learning process, in addition to improving communication and social skills among special needs students and saving time (2017).

On contrary, Anderson (2020), pointed out that the unavailability of competencies and e-learning skills represent a significant barrier for teachers' adoption of e-learning skills which will lead to a weakness in the implementation of online learning provided for students with special needs during the pandemic.

Ali (2021) confirmed that another challenge is the fact that teachers were unable to implement e-learning successfully to students with special needs. They are also presented with a fait accompli instead of an opportunity to discuss policy changes. Ali added that the learning facilities have not been provided to students with special needs by the respective educational institutes to attain a sufficient level of learning through online mediums, and therefore the process of learning was not done in the desired manner and students with special needs became unable to cope with these uncertainties resulted from such circumstances.

Other hindrances faced the process of implementing e-learning to teach students with special needs during the pandemic is the inability of the teaching special education institutions to perform and apply the launched innovative projects with a specific aim to teach students with special needs successfully because of many reasons such as the resistance from the teachers towards applying these projects due to their lack of confidence, insufficient financial support, and inadequate teachers' training in e-learning skills, their inability to improve their pedagogical performance, their negative perceptions, the inadequate support of the special education institutions' administration towards the teachers, and the insufficient time slotted for e-learning training for teachers and for students with special needs (Alhabeeb & Rowley, 2018; Aljaber, 2018).

### **Solutions:**

Students with special needs should be provided with all the means of distance learning that they need, such as the tabs, the Internet, an assistant teacher ... etc. further, students with special needs should be discussed about how to receive their education and the importance of adhering to the general situation and its requirements. Educational institution should also communicate with the families of students with special needs and building bridges of reassurance between these families and the educational institutions in which they study, as well as building bridges of reassurance with the students themselves (Yaghy, 2021).

It is also needed to integrate the cognitive-behavioral approach in the teaching of students with special needs during the pandemic to enhance teachers' attitude to the use of technology in the classroom and reduce any possible feelings of inadequacy (Atanga *et al.*, 2020). Technical and financial assistance should be provided to educational administrators (Tusiime *et al.*, 2020).

Consultations are important to teachers who teach students with special needs, especially in terms of the implementing e-learning, consider viewpoints, assess the competence and disband any barriers to the successful of such implementation (Ali, 2021).

Furthermore, to accelerate the process of embracing e-learning as a transformational approach to special education and the transition toward online learning in educating and facilitating the tutoring of students with special needs should began with a complete incorporation and integration of technology and e-learning into the entire education system followed by constructing developed computer laboratories in schools and training teachers as well as students with special needs on computer skills.

As for the variation of the understanding abilities of the students with special needs towards the e-learning system and their ability to interact with this system and the influence of such variation of understanding level in causing a variation of the implications for system design requirements. This necessitates the system designers to be aware of the students' needs to be able design the appropriate system that would ensure that the system adequately supplied the requisite educational provision to meet set goals. In addition to system designers' awareness of the students' needs, teachers should be also aware of the students' needs and therefore they should interact with special needs students through the system technically and socially (Alhabeeb & Rowley, 2018).

As reported by Altnay, *et al.*, (2018), most importantly, students with special needs who need special education should be trained differently from their peers for various reasons, and this is should be carried out in accordance with their developmental characteristics. Therefore, the learning and teaching opportunities given to those learners during the pandemic should be sufficient, well-planned, and with the appropriate environments and conditions as

well as with an integration of the right choice of utilized technology by well-trained teachers who are responsible for finding solution to possible communication challenges and reaching out students who need special education (ibid). Çelikten & Özkan (2018) supported Altınay, *et al's.*, (2018) point of view by stating that for students with special needs who are different and special from their peers and who have different levels of developmental characteristics than normal; the distance learning training to be delivered as an alternative to regular physical teaching should also be special with special education practices since it is considered as an opportunity to support learning of special needs students.

Special education schools should develop a comprehensive plan using evidence base data collection method which is based on collecting and aggregating International data, resources and information from other countries experiences to meet the urgent learning needs and demands of students with disabilities and special needs during COVID-19 pandemic and resolve emerging issues through offering specialized disability supports and establishing effective practices to apply on students with disabilities and special needs as they arise a result of COVID-19 especially when it comes to at-home learning with ongoing enhanced remote delivery after the transitions between in-school and distance education. Hence, special education schools should adopt an approach that enhance coordinated, interlinked inter-schools to provide a seamless service delivery model to provide services and supports to students with disabilities and special needs.

Special education schools should provide focused, practical training, direction, guidelines, and solutions for teachers and educators staff and grant them with accessible virtual learning webinars, templates for learning, etc. to be utilized to support students with special needs, wellbeing and learning in a virtual environment. Similar training should be provided to parent to develop professional training modules and resources to enable parents to develop their skills and knowledge required to support online and virtual learning at home for students with special needs.

Boudreau (2021) provided recommendations and practices that teachers can work on and implement during distance learning to support students with special needs and create an effective, safe, accessible and accessible environment for all learners. First: designing authentic assessment tools based on comprehensive performance monitoring It is certain that distance education or hybrid learning imposes restrictions on traditional learning methods, but at the same time it gives teachers more accurate and more accessible alternatives. For example, although the assessment of the performance of students with special needs is better in face-to-face education, distance learning provides more accurate and comprehensive tools for assessing the performance of students. Distance learning gives teachers new tools - such as the digital survey tool - that can be used with ease and ease to gain a deep understanding of students' needs, and also facilitates tracking of students who need additional support. It also gives teachers the ability to record lessons, keep guides, and tutorials designed to support students based on their individual needs and abilities.

Second: securing learning and technology platforms that are smooth and uncomplicated Education and technology platforms have become tools to capture students' attention and engage them in the educational process. Teachers should think wisely when choosing learning platforms and applications, especially those with different interfaces, because they can cause a lot of confusion for students. In fact, the use of seven smart applications for a student who does not have an Individualized Educational Plan (IEP) has many disadvantages. Therefore, teachers must cooperate and coordinate with each other when using technology in education. However, teachers are now more aware of what they are asking of students and why. However, the two

researchers point out that the problem of Internet access was and remains a major challenge during the pandemic period. As a result, educators have to find other ways and different strategies to communicate with students and parents that do not rely only on communication via the Internet.

Third: The importance of the teacher being an active participant Inclusive classes usually have a class teacher and another teacher to teach students with special needs. However, in hybrid education or distance learning, the focus of teachers on overcoming the difficulties of remote communication has become more than using the means of communication and integrating it into the lesson in the hybrid classroom. Hence, both teachers should do the teaching in the classroom and not one of them should be an assistant or a participant in the chats unless there is a purpose behind it such as guidance or assistance." If the role of teachers in the pre-pandemic stage is to jointly intervene to support students in small groups, for example, then the model must continue to be participatory during the implementation of distance learning, i.e. professional assistants should be collaborating in the teaching process.

Fourth: Think about managing time and distributing resources Time is an important resource that has been lost in the educational environment due to the pandemic. When we moved to hybrid learning, educators were so busy trying to complete the demands of work and distance learning that pedagogy has fallen out of favor and is no longer a priority. Growth and change takes time, but we don't take it or talk about it with decision makers to set realistic timelines. to develop. As a result, educators must think critically and constructively about services to students, being careful not to under- or over-serve students. Emphasis on that if the teacher wishes to provide effective service and appropriate support, this service must help the student to grow and learn. Fifth: Using technology to facilitate parental participation and inclusion when designing an IEP in the past, it was difficult to coordinate parental time with school time due to many circumstances. Now, after moving to hybrid learning, the coordination of meetings with parents has become more flexible, due to the option to participate in the remote meeting (Boudreau, *ibid*).

### **Conclusion**

This empirical study aims to discuss the impact of the COVID-19 pandemic on the learning process of the students with special needs. In this context, the study focuses on the challenges and opportunities that should be taken into account by teachers, especially after the emergence of 'e-learning' (also known as 'distance education' and/or 'remote learning') era.

The study concluded that COVID-19 pandemic has made a substantial impact on the education sector. In fact, the pandemic has changed the way in which education is delivered. Students, parent or guardians, and teachers had to change the way they access, support or deliver education. The pandemic highlighted gaps in digital skills, adaptation of technology to teaching and learning. It has also increased demand for technology and the need to integrate technology effectively into teaching and learning. With this increased demand in the use of technology and the gaps in digital skills identified, it is imperative for special education schools develop protocols and procedures and to train students, parent or guardians and staff in the use and integration of technology as well as virtual learning environments and synchronous teaching systems in teaching and learning through making online and virtual learning platforms accessible for all students with disabilities and special needs.

The study concluded that the global shift and transition from physical to the online environment (online platforms) due to the COVID-19 pandemic has imposed many effects on the public education sector in general and on the students with special needs and disabilities in

particular in an unprecedented way. At the top of these challenges is the transition to the e-learning system. Students with special needs faced various challenges in the distance learning process, the most important of which is the digital accessibility of electronic lectures, study materials and electronic exams, in addition to the psychological, social and financial effects of the pandemic on them and their families. In addition to the fact that people of special needs and disabilities are marginalized and stigmatized in normal situation, COVID-19 pandemic has also posed risks to those people around the world and casted great fears in their hearts

One of the most important challenges facing students with disabilities and special needs in the field of education is that there are no real and practical procedures by the concerned authorities (official and unofficial) that facilitate the process of accessing knowledge and information for students with disabilities and special needs and their families. Furthermore, some schools offer the possibility of distance learning, but this is not available to everyone, particularly students with disabilities and special needs. In addition, the inability of parents of students with disabilities and special needs to provide the necessary electronic devices to facilitate the process of communication and obtain information, in other words there is a high financial cost of e-learning for students with disabilities and special needs and their families. Another difficulty is that the educational platforms that have been developed for students in general, do not take into account the presence of sign language interpreters, and are not prepared in Braille. and the inability of workers in the competent authorities to communicate with students with disabilities and special needs, to hear the problems they face in the learning process.

Additionally, the study concluded that students with special needs were not able to have access to the resources required to access the learning material and they have not got sufficient support, including granting them with a significant level of skill-set that could be used accordingly for online learning skills, from their teachers as well as their respective educational institutes and hence their learning outcomes were limited. Actually, students with special needs could not grasp a sufficient level of understanding because their teachers were not able to design and develop on-line lessons that could be delivered accordingly. Besides, teachers, during the COVID-19 era were not prepared and having a sufficient level of training of on-line teaching using technology that could allow them to utilize several techniques and approaches to teach students. The 'stay-at-home orders manner' that students with special needs represented another dilemma for those students because such manner causes adversely on their psychological and mental health which eventually can lead to students with special needs to lose their coping abilities with the uncertainties caused due to the covid-19 pandemic. The study further concluded that some children with various disabilities and special needs may be excluded as online education is not available to them, including through adapted and accessible educational materials and communication strategies.

The study has also concluded that even if the use of e-learning (AKA distance learning) has a long tradition all over the world and both have been used to keep in contact with students and to provide lessons, support and learning materials, there is an open debate on the balance between advantages and disadvantages in the use of e-learning. This debate is even more central in their use to support students with special needs. The current COVID-19 outbreak caused school closures and the massive use of e-learning all over the world and it put higher attention on the debate of the effects of e-learning.

Part of the aims of this study was seeking to understand the general perception of the students with special needs' teachers towards the application of e-learning during the COVID-19 pandemic based on the literature that has been reviewed by this study including previous

studies, journals, books, etc. The findings demonstrated that teachers have been facing several barriers to the application of e-learning for students with special needs during the COVID-19 pandemic. At the same time, the teachers demonstrated a perception of the measures that are required to improve the implementation of e-learning in mainstream institutions.

The study further concluded that the upbringing of students with special needs' nowadays is intricately intertwined with technology on a daily basis. Hence, teachers are needed to have the requisite technical skills to successfully and creatively engage with these students during the teaching process. Particularly, the teachers should employ different pedagogical methodologies to improve their teaching skills and at the same time improve the learners' attitude for the sake of ensuring that these students feel included and maintain a sense of accomplishment and develop the confidence they need for successful learning.

Although the current study emphasizes the e-learning potentials in assisting the fundamental communication competencies of the special needs students and its significant role in enabling those students to develop their academic performance, social skills and complete their learning processes' tasks and activity scheduling, however, it also crucial to evaluate the effectiveness and reliability of the implementation of e-learning programs and platforms in the teaching students with special needs, having in mind the concerns regarding the challenges and difficulties discussed previously in this paper to be sure that e-learning implementation in tutoring students with special needs is successful.

It is recommended by the current study that teachers who are teaching students with special needs during the COVID-19 pandemic should be undergone more and more training on the use of the technologies and providing the appropriate equipment so that students with special needs are not further disadvantaged.

In terms of the application of online learning during the pandemic for special needs students and the incorporation of e-learning into the curricular programs, the current study recommends the educational institutions should deliver adequate educational resources, and appropriate software and hardware to enable teaching appropriate skills to the students with special needs. The study further recommends that communication between the educational institutions that teach students with special needs and the Ministries of education should be obtained as such approach of on-going communication would be vital in enabling real-time assessment of the entire process of e-learning implementation.

It is further recommended by the current study to incorporate the students with special needs at the early stage of designing e-learning programs and/or platforms in accordance with their specific needs and requirements with the assistance of specialists in special education as those students are often incapable of expressing themselves, their needs, and requirements. Accordingly, the implementation of e-learning designed specifically for those students will be successful.

Moreover, feedback from teachers, parents (through establishing a cross sectorial partnership), special education institutions, agencies, health professionals and educational stakeholders should be taken into consideration to address the barriers and emerging issues identified during the COVID-19 pandemic that are faced by students with special needs, i.e., the challenges compounded by COVID-19 in order to seek and tackle these barriers and subsequently develop recommendations to address these barriers and challenges and come up with solutions. The feedback that is supposed to be returned to schools is helpful for schools in terms of integrating, coordinating and fostering cross sector planning and taking the opportunities to review and structure policies and procedures that can be adopted and adapted to encounter and future barriers.

In addition, special education school should establish and assign committees that are responsible for planning and implementing the guidelines to eliminate and/or mitigate risks of COVID-19 for students with disabilities and special needs. These committees should be characterized with preparedness for dealing with any barriers through an inclusive process that include knowing the risks, make and develop critical plans, testing these plans, and update response procedures. The committees should further include advisors, guidance counsellors, psychologists who have the needed collective experience to provide insight on the needs, demands, and challenges of students with disabilities and special needs and offer solutions. Furthermore, the committees should also include members of the community or parents of students with disabilities and special needs.

It is hoped that the current research paper makes a significant contribution to the academic literature through reviewing the impact of the COVID-19 pandemic on the learning process of the students with special needs as well as explore the challenges and opportunities that should be taken into account by teachers and students with special needs. It is also hoped that the findings of the current study enhance for more pursuit of exploring the new direction for continuing the transfer of quality education of the students with special needs using e-learning and relevant digital tools during COVID-19 pandemic to encounter the challenges and difficulties faced by those students. It is finally hoped that this research could pave the way for future studies that further explore this phenomenon, i.e., explore how digital tools and e-learning can improve the educational attainment for students with special needs and the teachers' perception and attitudes.

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