

E- Learning: The School's Role in Promoting Inclusive Education for Children with Special Needs During Covid-19 Pandemic

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Abstract

The Coronavirus Pandemic has brought about vast changes in the lives of people, from daily routines to social interactions. These abrupt changes hugely affected the education system, bringing about initiatives such as online classrooms and asynchronous activities. This scenario is tough for everyone, but it is more challenging to people with special needs and disabilities, particularly those who have Autism Spectrum Disorder and their families. Some mitigating factors that the government has imposed to curb the spread of the virus include social distancing and health protocols, contributing to the struggles faced by the children and their families. With the use of technology, E- Learning has been made possible. Schools help lighten up the load by creating learning management system which acts as a replacement of traditional learning. Aside from children with disabilities, their parents or guardians should also be taught how to use the e-learning platforms for them to be effective partners of the teachers in guiding and nurturing these students. Through the literature review, this paper seeks to analyze the role of the school and the educators in promoting and fostering a culture of inclusivity for children with Autism Spectrum Disorder during the COVID-19 Pandemic outbreak, and to analyze how the Universal Design for Learning success model as an intervention that can support learners with special needs. The paper gives future directions for educators and researchers.

Keywords: E-learning, Children with Autism Spectrum Disorder, Inclusion during COVID-19

1. Introduction

In the past year, school closures have been implemented as one of the strategies to contain, limit and delay the growth of the Coronavirus (COVID-19) (Viner et al., 2020). Over ninety percent (90%) of children worldwide stayed at home (Van Lancker et al. 2020; Viner et al. 2020; Lee, 2020). Many schools are still

closed as of today, but the government, school administrators and the teachers worldwide arranged for “*distance learning*” to deliver the instruction and to further assist and brace the education amid the pandemic. This type of instruction is home-based due to the strict protocols that people are obliged to follow, imposed by the government in line of the coronavirus outbreak (Almaiah et al., 2020).

Following this, schools around the world have stepped into the digital world, where teachers and students are connected virtually. The use of computers and smartphones are one of the main tools in this learning method and the Internet is the key tool. E-learning is fast growing and has shown itself to be the best in all areas, particularly, in education during this hiatus (Radha et al., 2020).

Indeed, e-learning systems play a crucial role in the pandemic. This can help teachers organize, schedule, deliver and monitor the learning process during the period of suspension of face-to-face classes. This ensures continuous learning during the pandemic (Wang, et al., 2020). However, some issues emerged in carrying out these strategies. First and foremost, the availability of the gadgets to be used by the students for e-learning. Many families are having difficulties in acquiring desktops, laptops or smartphones to support virtual classes. Second, not all households have access to the internet, which plays a major part in carrying out virtual classes. In addition, family members play a crucial role in the online educational context. Burdette and Greer (2014, as cited by Parmigiani, 2020), stressed that parents feel insufficient supporting the on-line education of their children. Additionally, Rice and Carter (2015, as cited by Parmigiani, 2020) emphasized that schools must take on the responsibility to provide emotional support to family members as they are frequently overwhelmed by responsibilities. Lastly, although most people have all been affected by COVID-19, this virus disproportionately affects the most vulnerable populations (Wang & Tang, 2020).

The burden caused by COVID-19 is fortunately lower for children; however, the adverse effects of the pandemic are still evident (Song et al., 2020; Bellomo et al., 2020). The physical and psychological well-being of children are compromised by a cessation of face-to-face mode in school, social events and routinely health care. For those with special educational and health needs, the pandemic is even more disruptive (Bellomo et al., 2020). Moreover, these children with their current health challenges and inability to recognize and follow control measures imposed by the government have an elevated risk compared to typical children of contracting the COVID-19 (Juneja & Gupta, 2020).

The value of inclusive education is recognized in most countries since the Salamanca Declaration in 1994, to guarantee equal opportunities and rights for people with special needs. Ensuring that all children can be integrated, taught and recognized in schools consistently is the main goal of inclusive education. (Haug, 2016) This framework for inclusiveness inside educational contexts also take into account the structure and awareness of the school organization as a set of programs and events that enable all school children to participate and learn about their peers (Meyer et al., 2014, as cited by Parmigiani, 2020). In a common learning environment, students should participate in the educational path (Benigno et al., 2007, as cited by Parmigiani, 2020; UNESCO, 2015) that can instigate the involvement of all students as much as possible in regular school activities, promote their sense of belonging, and advance towards attainment of education

goals (Parmigiani, 2020).

This paper addresses the gap on the schools' and the teachers' strategies in catering to children with Autism Spectrum Disorder as well school's role in promoting inclusivity inside the virtual classroom. Regardless of the variety of ideas found in scholarly works, this paper highlights the interventions and the utilization of the Universal Design for Learning, a model for promoting the culture of inclusivity during the COVID-19 Pandemic through E-learning.

2. Literature Review

2.1 E- learning

COVID-19 Pandemic forces educational institutions to move quickly towards distance and online learning (McCarthy, 2020). The education system right now is in a state of emergency and must adapt to various accessible learning systems such as Learning Management Systems (LMS) and applications that can be downloaded into mobile devices. Although e- learning has been explored in the context of education, there is a need to reignite researches and studies to explore online learning opportunities brought about by COVID-19 Pandemic (Adnan & Anwar, 2020).

Disrupted learning that leads to lack of opportunities for growth and development adversely affects school children (McCarthy, 2020). Therefore, E-learning programs can easily address this situation with the help of LMS that is a significant source of information following the pandemic's aftermath (Eltahir, 2019). However, among students and teachers, this is becoming a challenge **in** many educational institutions in most countries. Conversely, the willingness of the children to embrace and utilize this type of instructional method is less of a problem for developing countries, since important steps have been taken in this regard (Almaiah et al. 2016). The center of social activities and interactions are educational institutions, especially to children with ASD; however, Unfortunately, despite schools' cessation a year ago, the global scale and pace of current instability remain unprecedented (McCarthy, 2020; Adnan & Anwar, 2020).

Koohang (2009) created an online learning paradigm grounded on the theory of constructivism. Rooted in learning theories refined by Psychologists like Vygotsky (1978), Piaget (1972), Bruner (1990) and Dewey (1916), a constructivist learning theory characterizes itself as active learning building on previous understanding topped with new knowledge. Jonassen (1999) used the constructivist learning method as a basis to create "the constructivist learning model" since e-learning was extensively designed using this method. The paradigm for learning based on the principle was proposed by Jonassen (1999); and according to Gündüz et al., (2016) "A constructivist learning environment is technology-based". The aim of this model is to enable learners to actively build new knowledge in order to develop e-learning tasks. Students are expected and encouraged to establish their own goals and priorities. The philosophy is to promote exploration and self-paced learning methods. Learners take control of their learning (Koohang et al., 2009, as cited by Gündüz et al., 2016).

Thus, there is definitely a need for schools to adopt curriculum re-design techniques in line with the concepts of the pedagogy that promotes the use of online learning systems and multimedia resources (Lestiyanawati & Widyantoro 2020). Researchers Wong et al. (2015) stressed that this paradigm is relevant to children with ASD and have consistently shown its relationship with beneficial effects in various skill spheres (National Autism Center, 2015). However, there are barriers to accessing e-learning, as many families are unfamiliar with the delivery of educational programs. While certain households may have access to services offered at home by other agencies, some of them require pre-intervention screening which can only be delivered within a few hours a week.

Although E-learning may imply the heavy use of technology to encourage learning processes, a term, “*e-inclusion*” was coined by Parmigiani in 2020 following the restrictions imposed by the governments worldwide to repress the extent of the virus. Florian (2017) and Ronchi (2019) stressed that for the successful implementation of e-learning and e-inclusion, a pedagogical model is needed. Rice and Dykman (2018) mentioned that the benefits of online learning to children with special needs are high, but multiple crucial challenges remain: the student achievements, lack of collaboration among teachers and families and the low level of support to teacher's technological abilities. Therefore, there is a need for teachers to train families on strategies to deliver instruction, to help manage disruptive behavior, apart from preparing curricular materials (Wainer & Ingersoll, 2015). The challenges in distance education are also exacerbated as teachers face increasing obligation to look after their own families as well as their own children's learning, and to take care of their well-being & emotional as well as medical needs; so much so, that the need for teacher-family collaboration is becoming more acute (Wainer & Ingersoll, 2015, as cited by Stenhoff et al., 2020).

Multiple levels of instructional support needs to be planned in view of these drawbacks to distance learning for students with ASD in the light of the existing crises (Croft & Moore, 2019). Although it is ideal that teachers should always support students and families, uncontrollable factors such as, internet access and the student's characteristics can affect the selection of the methods of support. In creating these e-learning kits for children, teachers must adopt research-based activities to ensure the engagement of both the students and families (Stenhoff et al., 2020). It is still unclear how the strategies for e-learning and online classes would affect children with autism during the pandemic. A lack of individual support in a formal and structured environment may have a detrimental effect on learning for a handful of students.

However, some might find beneficial impacts on learning outcomes when they stay at home and it could provide them a pathway to engage in calming and soothing practices (Ameis et al., 2020). The utilization of online educational platforms and healthcare services became the most challenging strategy for ASD children with high demands of support in which cognitive aspects and communication are crucial for involvement. In addition, online education also relies on the provision of communication technology and the availability of the families to support students. Consequently, these will have an impact on the education problems, socio-economic drawbacks and parental stress of many children with ASD and their families.

2.2 Children under the Autism Spectrum Disorder and Inclusion

A neurological disorder is used to define Autism Spectrum Disorder (ASD). Developing in childhood stages (American Psychological Association, 2013). It pertains to having problems with social interaction, fixations in routines and objects and over-reactions to one or more than the five senses of the body. World Health Organization (WHO) in 2021 specified that because of their sluggish lifestyle, children with ASD present a category of special risk during the pandemic, as it raises the risk of heart disease, diabetes and obesity (Bellomo et al., 2020). The disruption in their routines and regular treatments are taking a toll on their behavioral and cognitive skills. ASD is often comorbid with other disabilities such as intellectual impairment, epilepsy, or cerebral palsy, which can be a factor of increased chance of severe complications during COVID-19 (Pettreto et al., 2020).

Children with ASD and their families are having severe educational difficulties due to the school cessations following the effects of the disease (Kohli & Writer, 2020). The intensive support and therapy for children with ASD cannot be achieved with closed schools and rehabilitation centers (Narzisi, 2020). Besides the lack of face to face classroom interactions, e-learning environments do not provide an appropriate and suitable instructional context. Alternative strategies are required to enable these children to stay at home during the outbreak of the disease (Kohli & Writer, 2020; Yarımkaya et al., 2020).

2.3 Inclusion during the COVID-19 Pandemic

The continuation of the 1997 Individuals with Disabilities Education Act (IDEA) has been long debated since the start of the outbreak. It is argued that teachers in schools were unprepared to picture inclusive environments that will fulfill the legal requirements of IDEA in online settings (Kozleski, 2020). Schools were not able to rely on prior expertise in the field of inclusion since inclusion was primarily designed as sharing a physical space with other children rather than substantive experiences with each other.

For children with ASD, schools can serve a variety of functions for their skill improvement; from academic education to building communication and social skills. Unfortunately, the difficulty of the delivery of an inclusive, and Free, Appropriate Public Education (FAPE) has been underlined by recent events for children with ASD. Possible trauma both associated with crisis events and the subsequent sudden shift in everyday routines faces students and their families. For most individuals with ASD, including those with extensive support, this can provide a harder transition from school to home (Stenhoff et al., 2020). It is a concern that teachers delivering instructions online lack resources for both professional learning opportunities for teaching children with disabilities during distance learning (Rice, 2017; Smith et. al., 2016). Policies or ensuring the implementation of IDEA in virtual schools have been largely unsuccessful (Churchwright, 2018). Emerging researches about students with disabilities who are utilizing online platforms for their learning suggest that many students and families struggle to handle change in tasks and obligations in these new settings (Ortiz et al., 2020). This notion posed the question on whether inclusion is applicable to online learning, and how are schools promoting them inside the virtual classroom.

2.4 Inclusion in E-Learning

The key question emerging from following the effect of the COVID-19 Pandemic is how to improve e-learning and how to accommodate inclusion. To this end, there have been a few studies evaluating the effect of online education on children with autism that will provide valuable input for understanding the potential and challenges before the pandemic occurred.

E-learning, together with e-inclusion (Parmigiani, 2020) emphasises the use of ICT for overcoming children's limitations (Mitchell & Sutherland, 2020) and the active participation of children in social learning contexts (Rice & Dykman, 2018). In addition, the advancement in technology provides the potential for more active support for e-learning processes, hence, supporting inclusion in virtual instructions.

According to Lombaert, et al., (2006, as cited by Parmigiani, 2020), ICTs support children with disabilities in various ways (Zhu & Van Winkel, 2014, as cited by Parmigiani, 2020), to maintain their social interaction with their peers to name one. ICT will broaden learning processes by providing online experiences outside the classroom (Wadley et al., 2015).

A set-up of a video conferencing has demonstrated particular effectiveness among the various strategies adopted in this current emergency (Parmigiani, 2020). This set-up gives opportunity for children with ASD and other disabilities to have access close to being in a traditional classroom to the activities during instruction. Moreover, there are available mobile applications for learning that enable children with ASD to take part in activities and lessons provided by teachers, allowing them to engage and interact virtually with teachers and classmates (Ismaili & Ibrahim, 2016). In an inclusive environment, these technologies could support the needs of ASD students from academical to social needs (Xie et al., 2017). Following this premise, schools, teachers, and parents will need innovation, versatility and collaboration to meet the challenges posed by COVID-19. Creating a goal with an open mind, discussing variety of ways to achieve a goal, and how accommodations could be delivered (Shade & Ware, 2020).

However, because of inflexibility and insistence as the hallmark features of Autism, children with ASD are exposed to prolonged isolation and hence, experience difficulties to adapt to the new norm (Smile, 2020). During all phases of learning, children with ASD will require extra support. They need certain accommodations from other school professionals; however, the mandate to stay at home restricts such professional social interaction. Children with ASD have the right to access e-learning platforms provided by their school. However, it is not fairly easy for teachers to always be mindful of their students' needs, even though they pay close attention to their needs during distance learning. Furthermore, it is difficult to take into consideration all the aspects of a child's development when preparing for activities and lesson delivery (Pettoreto et al., 2020).

2.5 Interventions for Education of ASD Children during COVID-19

Very few discussions have been undertaken on the strategies to support children with disabilities who are

depending on schools and the programs that they offer for their growth and improvement. A Universal design for Learning model must continue to be developed and adapted by the schools and organizations to address different risks (Katz, 2016); and support the individualized learning of children with ASD.

Rose (2002) and his team at Harvard University founded an inclusive pedagogy, "Universal Design for Learning" (UDL) (Meyer, Rose & Hitchcock, 2005, as cited by Katz & Sokal, 2016). This model aimed to break down walls and provide assistance for children with special needs. UDL has a structured framework to encourage the learners' use of physical, social and academic spaces that facilitate meaningful functioning abilities when applied to learning.

There were few pragmatic studies that recorded the impact of UDL, but these yielded positive results. Accessibility, engagement and development for all learners have been demonstrated by UDL (Meo, 2012; Rose & Meyer, 2002, as cited by Katz & Sokal, 2016). For students with disabilities, the use of UDL as an approach to learning has shown to increase connections with disabled peers, to allow better participation and involvement in learning and develop more skills in classes (Dymond et al., 2006, as cited by Katz & Sokal, 2016).

To meet the demands for learning of varied learners, a three-block model of Universal Design for Learning developed by Katz and Porath (2011) made use of a multi-level approach supporting the academical and social-emotional well-being of students that focus on pedagogy and the processes and frameworks that must be established within schools and organizations in order for UDL to function. This includes a collection of strategies aimed at developing students with different strengths and develop respect for others. The third block that deals with systems and structures contains components that includes co-teaching opportunities to support diverse learners that comes within the jurisdiction of administrative decisions (Wiggins & McTighe, 2006, as cited by Katz and Sokal, 2016).

The use of a success model of UDL poses that there is definitely a need for schools to re-design, and implement a curriculum to foster inclusive education through the virtual world. Teachers must prepare materials for their students with ASD to facilitate distance learning (Smart Brief, 2020). In addition, families should collaborate and seek additional strategies with teachers to support their children's individualized needs and address their abilities to access materials (Stenhoff et al., 2020).

In order to foster effective inclusion, a collaborative practice should be implemented. Teacher collaboration in schools can support communities practice through a set of relationships that can help improve children with ASD and enhance their learning experience (Mullholland & Connor, 2016). The inclusive activities could be effectively adopted and implemented with good cooperation between teachers and families. Furthermore, collaboration among teachers to share instructional techniques and resources will foster a positive environment for children (Parmigiani, 2020). Teachers have to reinvent a modern model of inclusion that is completely in an online environment. During the delivery of the lesson and the activities, teachers must arrange the asynchronous activities apart from the synchronous ones to have an on-going

relationship between the class, teachers and other stakeholders to support children with any technological or pedagogical problems.

When it comes to teaching children with ASD, there is no standard approach to instruction. Each family has the understanding of what will work for their children. When everyday lives abruptly shifted, challenges emerge as a tool of dispute or communication against new behavior or behavioral regression. A positive reinforcement strategy might be the most effective behavioural technique that schools and families may adopt but preparation can be time-consuming (Espinosa et al., 2017). In order to maximize effectiveness, strengthening exercises should be structured whereby child is always competitive (Mendoza et al., 2019).

It remains uncertain whether children will return to their normal activities of schooling and leisure safely. These uncertainties cause challenges for children with ASD, especially in planning for routines. Waves of the COVID-19 are possible and stay-at-home orders can be restored, which can bring about more unpredictable changes (Xu, 2020). Schools must plan for the upcoming days of doing more virtual activities with the children, and supporting their families as well.

3. Conclusion and Future Directions

To maximize the effectiveness of the E-learning for children with Autism and achieve favourable results, parents, teachers, school administrators and the education department should collaborate and support the education and well-being of these children. Integration of a multi-level intervention model created as a pandemic response program is needed for the children and families. Organizations are challenged to reconstruct services using virtual care platforms (Smile, 2020). To address the children's and the families' needs, programs that are easy to use and implement should be designed and delivered.

The authors of this paper advice the educators to be more resilient, resourceful and creative to continue the delivery of quality education to all including the ASD children, for the development of their intellect, safety and well-being. Future researchers are advised to undertake qualitative studies on selected schools claiming to apply the UDL model.

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