

# Experience of e-Learning during Lockdown for Students with Intellectual Disabilities

Emad M. Alharthi and Nizar H. Bagadood

Faculty of Education, Umm Al-Qura University, Makkah, Saudi Arabia

## Summary

This study examines the impact of e-learning on the educational level of students with intellectual disabilities from the viewpoint of their teachers. The study sample consisted of seven teachers: two working in primary school, two in middle school, and three in secondary school. The research applied a qualitative approach, using interviews with the participants. The results showed that the following are required for the effective use of e-learning: firstly, appropriate training courses need to be offered to teachers, students, and families and secondly, it is vital students are provided with the appropriate digital devices to maintain contact with their teachers. The study concludes by recommending the development of educational applications and/or programs capable of supporting teachers and students in their use of e-learning.

### Key words:

*e-learning, educational programs, intellectual disability.*

## 1. Introduction

E-learning is a method of learning designed for individuals unable to attend an educational establishment due to: (1) physical distance (i.e. in sufficient time or an inability to travel); (2) disability (i.e. the learning disabled); and (3) those living in remote areas lacking access to schooling (Amira et al., 2019). The advantage of e-learning is that education can be made available online, regardless of location, so helping to firstly, bridge the digital gap between modern technologies and their integration into the school curriculum and secondly, providing teaching staff with effective means of communication with their students. This can include an application facilitating communication, as well as multiple study courses in the form of e-mail or a group study.

Those with intellectual disabilities form part of society and have rights and obligations including in relation to their special educational needs, as well as being able to work and live independently in a way that guarantees them a decent living (Ashmawi, 2015). Students with intellectual disabilities can also have sensory, cognitive, mental, linguistic, or psychological issues capable of preventing them from mastering skills such as reading and writing,

resulting in a need for special educational services to overcome such difficulties. The provision of educational opportunities for students with intellectual disabilities can therefore prove challenging. In addition, their integration into the e-learning system has specific requirements designed to improve their educational performance, i.e. technology systems providing them with appropriate tools to overcome their challenges (Thurm, 2019). The recent increase in technological innovation has allowed these students the means to challenge their disabilities and benefit from elements of the educational process, in particular educational resources and materials (Al-Qahtani & Al-Juda, 2018).

Mikołajewska & Mikołajewski (2011) confirmed that e-learning plays an important role in the rehabilitation of those with intellectual disabilities, including enabling them to develop their cognitive abilities. In addition, Barrett (2011) demonstrated that participatory e-learning by means of the Internet offers many skills, abilities and knowledge capable of being adapted for students with intellectual disabilities. This has prompted the current study to determine the role of distance learning in improving the educational level of students with intellectual disabilities from the perspective of their teachers.

## 2. Literature Review

A considerable number of researchers are currently conducting studies into the use of technology for the education of those with disabilities, in order to facilitate understanding of the role of e-learning. This includes the work of Marilyn, Balmeo, Ericka (2014), who examined the use of educational technology in classrooms for students with special needs, as well as identifying the obstacles faced by their teachers. The study group consisted of fifty-three teachers, with a survey used to collect data using the descriptive approach. The results revealed the current limited availability of educational technologies in the classroom, resulting in the study recommending that educational technologies should be integrated into learning environments for those with special needs, in order to enable them to overcome

challenges limiting their performance. Alsharife (2014) focused on determining the barriers faced by female teachers in integrating technological innovations for elementary school students with learning difficulties, which included: age, qualifications, experience and training in education and educational technology curriculum. The study used a descriptive survey method with a sample of fifty female teachers, revealing that the most important hindrance to the use of technology arose from the failure of teachers to attend training courses on the innovative use of technology, particularly in order to overcome the use of technology to overcome students' psychological and material difficulties.

In addition, a number of further studies have attempted to measure the quality of devices used for teaching people with intellectual disabilities, as well as their potential benefits. Burton et al. (2013) employed a single case study design to investigate the impact of using iPads on the mathematics performance of adolescent students, using a study sample by means of a video self-model. This found that iPads only improved the participants' performance during the application of the intervention, although the participants subsequently demonstrated their ability to transfer their newly acquired skills to unfamiliar situations. In addition, Balmeo et al. (2014) examined the integration of electronic education and its technologies in classrooms for students with disabilities. The study used a descriptive approach, using a sample of fifty-three teachers.

The importance of supporting workers with disabilities has led to some suggestions for achieving the highest quality standards for e-learning applications. Jones (2010) implemented an online course for teachers of students with severe intellectual disabilities, designed to enable them to engage in dialogue, as well as offering ideas to support the development of the curriculum development and a less rigid teaching environment. The study used descriptive, as opposed to experimental, methods and focused on twelve teachers, with ten completing the course. The results of this study were discussed in relation to e-learning as an aspect of special education, with the teachers encouraged to explore new ideas and apply e-learning to students with intellectual disabilities.

Lee et al. (2017) investigated the impact of visual thinking strategies on student participation and assessment in science lessons in an elementary school. This included improving the process by which the students were helped to understand the purpose of the lesson by enabling them to express their opinions by means of pictures, or by writing on a specifically designed provided thinking card provided by the teacher after they had completed a regular science and visual thinking class. These strategies were practiced during the intervention phase once a week over a period of fifteen weeks. The most significant outcome was

that the analysis of student performance pre- and post-test indicated an enhanced participation and performance in three of the students.

The above literature review has shown that e-learning can improve the educational level of students with intellectual disabilities, thus confirming the results of the current research. In addition, the existing literature relating to this subject was used to identify the topic of the current research.

### 3. Method

This section discusses the research methods employed by the current study, including the participants, and the strategies used for collecting data. Due to the lack of previous detailed research, this study adopted a qualitative approach, using semi-structured interviews to collect information concerning the impact of e-learning on those with intellectual disabilities. This demonstrated the role of teachers in activating and determining e-learning, as well as highlighting the related challenges.

This study employed the qualitative approach due to the need to obtain a deeper understanding of the issues through in-depth information and data (Croswell, 2017). This included the use of the semi-structured interview method to collect data from teachers from a selection of schools in a pre-approved manner. This confirms the research sample as purposeful. As noted above, there were seven participants, distributed as follows: two teachers working at the elementary level; two teachers at the intermediate level; and three middle school teachers. This demonstrates that this study covers the experience of teaching pupils between the ages of seven and fifteen. In addition, it forms part of the integration project attached to the public school in Makkah.

The researcher created a study tool based on previous studies and the related educational literature. The interviews included questions concerning the interviewer's demographics (i.e. age and years of experience). The first section focused on the teachers' views of the benefits of e-learning for improving the educational level of students with intellectual disabilities. The second section examined the ways those with intellectual disabilities and their educators used e-learning to overcome any challenges. In order to confirm they were appropriate, the interview questions were first pilot tested on a sample of five teachers. This enabled the interview team to ensure the questions could be answered without restriction by the teachers, permitting them to fully express their views on e-learning for people with intellectual disabilities, including the associated challenges. The participants were personally emailed a copy of the interview questions before appointments were arranged to carry out each interview, as well as giving permission for their words to be recorded. Each interview lasted approximately

forty-five minutes, with the audio recording subsequently being transcribed into readable text.

The researcher then collated the ideas and opinions emerging from the interview data, analysing them using thematic analysis, as this assists in interpreting data in a logical manner (Terry, Hayfield, Clarke, & Braun, 2017). The transcript was analysed through the following steps: firstly, if more than one person said the same word, the transcript would be underlined; secondly, if the same word was said at different times in different interviews, the word was boxed in the transcript; thirdly, a number of the quotations were selected to support and confirm the results of the interview.

#### 4. Findings and Discussion

Prior to presenting the findings, it is important to note that the main aspects of this research arose from gathering accurate information from the groups working with those with intellectual disabilities at various levels of education, i.e. elementary school, middle school, and rehabilitation. This study highlights that e-learning enables students with intellectual disabilities to receive education. The data was also analysed following a process of manual coding, which revealed the topics and themes discussed in this paper.

The first aspect arising from the data concerned the role of the teacher in e-learning. The results of this current study confirm the findings those of Al-Qatani (2020), which highlighted that issues related to the curriculum are not due to the different levels of students, but rather to: (1) the teacher's lack of skill in both removing and adding certain aspects; (2) the lack of any additional explanations for courses on educational TV channels; and (3) existing class schedules, which tend not to be commensurate with the nature of these courses. The responses of the teachers providing vocational rehabilitation services indicated that they considered the current curriculum incompatible with e-learning, as they felt they were in need of additional training to acquire adequate skills in some of the subjects offered to their students. One interviewee noted:

"I'm teaching at a secondary school providing vocational rehabilitation services. They are expected to be used in the field. All curricula have practical topics, so linking them to e-learning is very problematic. How do I set up a computer and it is my job? Professional topics are practical." (Teacher at a secondary school)

Similarly, most of the teachers providing vocational rehabilitation services in secondary schools commented on the need for the school to provide field training, as well as the potential benefits of audio and video teaching materials. One of the secondary school teachers indicated a discrepancy in students' mental abilities, which (as a result of the method and characteristics of e-learning) placed an additional burden on the teacher:

"Every individual has their own difficulties. From my point of view, I either assign a part or divide the lesson into two parts. I also divide the students into two groups, Group A and Group B, and convey the lesson ideas according to the student's reaction." (Teacher at a secondary school)

One suggestion capable of being implemented when there are significant differences between students' abilities is to distribute the work amongst the special education team, using an assistant to the main class teacher to help students develop their skills in a more rapid manner and so reduce the burden on the teacher. However, the teachers admitted that they faced a number of challenges when using computers and e-learning with their pupils with intellectual disabilities. Hussein and Wahbash (2020) argued that such teachers require appropriate training courses to improve learning outcomes for people with intellectual disabilities. In the current study, the teachers working at all academic levels voiced their concern at the lack of training in how best to deal with intellectual disabilities during e-learning. The responses from the sample were reflected in the failure to provide them with the explanatory evidence approved by the Department of Education concerning the best strategies for e-learning with pupils with intellectual disabilities. One informant reported that:

"Only those who found a seat and took an initiative in development attended a professional development course. They also made time for themselves to learn about development and register for the course." (Teacher at a primary school)

This view was echoed by another informant, who considered it important to use modern means of communication and the Internet to help special needs teachers overcome any difficulties:

"I live in a neighbourhood in which the networks are sometimes weak. The Internet causes me a problem. I'm having trouble playing videos and sometimes there is a glitch when preparing lessons on my school platform, which is the most technical problem I have seen." (Teacher at a middle school)

The interviews with teachers of students with intellectual disabilities revealed information on how they prepared their study plans to ensure an effective teaching strategy, in particular by building an individual plan for each student. However, since some students had been absent from class, which confused their work-load, several teachers had not been able to continue with plans they had prepared in advance:

"It's not the same as the education methods we used before, and it's given collectively, but it's also individual in the sense of its size and repetition. I try to give difficult exercises for more able students and easy ones for those experiencing difficulties. The curricula are one and the goals one, but attendance often fluctuates, which has made

me decide not to continue with the plan.” (Teacher at a primary school)

While studying a similar context of teacher training and professional development, Al-Saleh (2020) noted the important role played by school leaders in the success of e-learning, due to the need to educate each leader’s psychology and morality. At the same time, the participants of the current study expressed the need for continuous follow-up and support, i.e. facing challenges together to improve the quality of e-learning for students with intellectual disabilities. One noted that:

“There is no support at all. The visit was only a few minutes long, a visit that would be a routine visit for a teacher in a traditional education environment.” (Teacher at a secondary school)

In addition, the majority of the participants agreed that it would be beneficial to develop e-learning programs and applications to provide educational and social skills to students with intellectual disabilities, as this would allow students to practice these skills outside school hours. One of the participants noted:

“Yes, e-learning program for students with intellectual disabilities must be developed. Students at secondary level who need field training in some subjects may be helped by practical lessons. Yes, this idea is not a bad one and I support it very much. If there is a program or application that can teach them skills, it certainly has a positive impact on the students, so I applied this with my students while they were learning a surah from the Qur’an.” (Teacher at a middle school)

A number of the participants also expressed concerns associated with the difficulties experienced by students with intellectual disabilities when it came to the reliability of their networks. This appeared to represent the majority of participants, and was particularly problematic when it came to online availability at the start time of the school day and also for specific lessons:

“Some of the reasons why some students are not constantly present is that their Internet package subscription has ended, or poor coverage due to the large number of devices connected to the Internet at the same time.” (Teacher at a primary school).

This view was echoed by another informant who stated:

“There is a major issue with the start of the school day for students who have parents who are working from home. These students have be allowed only forty minutes each day to use the platform”. (Teacher at a secondary school)

When asked whether the accessibility of devices (whether mobile, computers or a television), enables students with intellectual disabilities to be present on the official education platform, the participants were unanimous in the view that the most important aspect is the students’ participation, regardless of the type of device they own. This was followed by the need to select the most

appropriate device in terms of size and clarity. One of those interviewees suggested that:

“Some students can access the information they need on their computers, phones and iPads without any problems, while others experience difficulties in reading on these devices and can only access the platform with the help of their parents or guardians. The most common way of accessing the platform is through a mobile device or an iPad, because most students are used to playing video games.” (Teacher at a primary school).

In addition, one teacher stated:

“Yes, each of them has a mobile device. I am worried that many of them may not attend. I compare the situation to my own kids, who have devices intended for use on the bed or sofa and for relaxing. It’s not only the use of mobile devices that’s an issue, but also the need for some kind of preparation. I don’t mind them using mobile devices, but what’s most important is that they attend and benefit. If you ask someone to do something for you, they might forget to do it. For many of my students, the practical part of their course complements the theoretical aspects, but others can only understand the theoretical aspects through practice. They need skills that aren’t there.” (Teacher at a secondary school)

When the teachers were questioned about the degree of boredom experienced by students during e-learning, they noted that this could arise from a lack of diversity in teaching methods, as well as the inability to practice student participation and interaction. In particular, the middle school and secondary school teachers demonstrated evidence of boredom due to the length of the e-learning periods. This is supported by Al-Khatib and Al-Hadidi (2014), who stated that, in order to maintain pupils’ attention, it is vital that distance learning employs stimulating methods. One interviewee argued that:

"Each of us has a limit before we lose interest, and our students can become bored as a result of the routine followed in educational activities, so we must consider the length of time of each e-learning lesson and the diversity of activities." (Teacher at a secondary school).

This view was also supported by a further informant, who commented:

“Yes, my students sometimes suffer and it depends on the style of the teacher. Teachers should use different teaching methods and strategies to encourage student participation, so that there is no danger of boredom during the class.” (Teacher at a middle school)

The data demonstrates that assistance from their student’s families enabled the teachers of children with intellectual disabilities to cope with the challenges of e-learning. In addition, all the interviewed teachers agreed with the benefits of holding a training and awareness session for students’ families at the beginning of each school year, which could help also help the family benefit from these courses and participate in the success of e-learning for

students with intellectual disabilities. One of the respondents reflected that not all parents receive clear explanations on how to use the e-learning platform. This can impact on the quality of education, while the student may be absent for long periods of time while being unable to benefit from e-learning platforms, whether from the school or an alternative source:

“The loss of contact with their family is the biggest drawback, and the percentage of absent students can sometimes be considerable. E-learning can result in students losing many of the skills they had previously acquired.” (Teacher at a secondary school)

Those with intellectual disabilities living with families in low-income areas may also experience a further decline in socio-economic status. According to a survey undertaken by Al-Sayed (2016), this can lead to a tendency to lose interest in education, as it needs to be repeated constantly. In addition, the teachers agreed such families lack an environment to facilitate concentration, with one stating that:

“Some students said there were other people in the room. This shows that they lacked privacy because the house is small and there is no space for a separate room. Sometimes, when someone enters the room during a meeting, the students will change their voice.” (Teacher at a primary school).

In addition, the middle school teacher noted that the economic situation of the student's family can indicate an inability to provide devices (i.e. laptops or mobile phones): “A family's resources have an influence on e-learning because their economic situation makes it harder for them to provide educational resources for their children.” (Teacher at a middle school)

This study found that teachers and school leaders were able to provide support to these families, but that it was not always effective. This was supported by Al-Saleh (2020), who found that school leaders can play a role in activating such support during e-learning. One interviewee noted that:

“Some parents cooperate with the school, but others have never been in contact with the school. Some take e-learning seriously, and make continuous follow-up with their son, which is positively reflected in the improvement of their son's performance.” (Teacher at a secondary school)

This view was echoed by a further informant who encouraged parents to seek support from the school, including meeting the head of the school platform, in order to overcome any difficulties and address any gaps in their knowledge, or to communicate with a teacher on the phone about in order to develop appropriate solutions.

## 5. Conclusion

This study has highlighted the need for ongoing training in the skills required for high quality e-learning for students with intellectual disabilities, particularly in the light of the Covid-19 pandemic, which has exerted a considerable impact on their provision. It has found that technology can help assist students with their studies, but that they also need to be reminded repeatedly of previous information, which can cause a number of difficulties. This was highlighted by the current study, as the teachers at the school which formed the focus of this examination experienced several problems. This was primarily due to the need to teach a large number of students with a wide range of issues, as well as the school's lack of fundamental instructions when it came to the teaching process

This study has stressed the main difficulties experienced by students with intellectual disabilities and their teachers during the process of e-learning, including a lack of communication between parents and the school and the timing of these educational sessions. In addition, they were found to face challenges arising from the following: (1) poor infrastructure; (2) a lack of sufficient straining courses; (3) an inadequately designed curriculum; (4) incompatibilities with e-learning processes; and (5) weaknesses in available communications networks. This study therefore concludes that, in order to overcome these difficulties, it is vital parents involve themselves in supporting the skills and challenges inherent in the mechanisms of e-learning. In addition, it recognises the need for schools and teachers to provide training and workshops for families, to help them overcome the challenges of helping these children with their education. The results of the study indicate that that families should be financially supported, as well as their infrastructure improved to enable them to access technology to benefit from e-learning. This has led to the following proposals. Firstly, to offer specialised training courses for teachers, students and families in the areas of e-learning and computer skills, providing material and moral incentives for teachers and students to use e-learning effectively and efficiently. Secondly, to set up seminars and workshops for teachers to raise awareness of the need to adopt e-learning, particularly in the light of the closure of institutions as a result of the Covid-19 pandemic. Thirdly, to employ teachers with experience of e-learning to teach the required skills to the relevant educators.

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**Emad Alharthi** received the B.E. and M.E. degrees, in Special Education- Intellectual Disability from the Department of Special Education, Faculty of Education, Umm Al-Qura University, Saudi Arabia. His research interest includes online education, e-Learning, educational programs, technical support. relate to the educational experiences of students with intellectual disabilities.

**Nizar Bagadood** obtained his BA in Special Education- Intellectual Disability from the Department of Special Education, Faculty of Education, King Abdul-Aziz University, Saudi Arabia. He joined the Graduate School of Education, Bristol University, UK, and received his MEd & MPhil/Ph.D. in the field of Special and Inclusive Education. His specific interests relate to the educational experiences of students with intellectual disabilities and the role of special education provision in supporting them. Nizar continues to work closely with schools and teachers and is committed to the principles of inclusion, social justice and participation in every aspect of the work, including designing research that is meaningful and important to the people he works with.