COVID-19 and the status of remote learning for students with disabilities in Jordan: the learned lessons

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ABSTRACT

The study investigates the effectiveness of, attitudes towards, and teacher's competencies in distance learning for students with disabilities in Jordan during the COVID-19 pandemic. The purposive sampling technique was used in this study, which includes twenty-five special education teachers. Qualitative research data from individual interviews were analyzed using thematic analysis. Results revealed that remote learning is a new educational concept associated with negative attitudes in Jordan. The majority of participants think that remote learning is not an effective way of teaching students with disabilities. Data analysis revealed that most special education teachers perceive themselves as having a low competency in implementing remote learning in the education of students with disabilities. Several barriers and suggestions are reported. This study documented lessons learned during the pandemic, which could be applied after it has ended. The pandemic has highlighted inequities in technology access and teacher knowledge and provides the impetus to address such inequities in the future. It is vital to promote the implementation of effective applications of remote learning in related special education contexts. Recommendations and practical and research implications are presented in light of the study results.

Keywords: COVID-19, remote learning, students with disabilities, online learning

INTRODUCTION

The current international COVID-19 emergency is of vital concern due to its fast spread and high transmission percentage all over the world (Kowalski et al.). This epidemic has affected educational systems worldwide as it causes the near-total closure of educational settings to reduce the gathering of people in public places (Mustafa, 2020; Reimers et al., 2020). Over 91% of the world's students are impacted by closures (UNESCO, 2020). Jordan was one of the first countries in the Middle East region to close all educational institutions in the middle of March. Jordan announced a state of emergency on 19 March 2020.

The COVID-19 epidemic looms over all society members, although individuals with disabilities are more likely to be affected because of institutional, attitudinal, and environmental obstacles that are evident in the response to the COVID-19 emergency (United Nations, 2020). Students with disabilities (SWD) are vulnerable to exclusion from education if they face accessibility problems to distance learning (DL) programmes, or in the availability of assistive devices to facilitate their involvement and meet students with disabilities learning needs. Students with disabilities who are reliant on support for their everyday skills may become isolated and face challenges during closures due to COVID-19 (United Nations, 2020).

Therefore, the support of education leaders is vital to guarantee that distance learning platforms are both accessible to and safe for students with disabilities, that teachers are qualified to teach students with disabilities distantly, and that programmes for students with disabilities are considered in order to safeguard education continuity (UNICEF, 2020). During the COVID-19 emergency, millions of school students are included in fully or blended online learning (Tindle et al., 2017). Unfortunately, in this health crisis, less help and fewer qualified teachers were available to students with disabilities than students without disabilities (UNESCO, 2020).

However, currently, online learning concepts have significant roles in educational technology at all educational levels and in diverse educational settings (Bjekiü et al., 2014). There is no single, agreed definition of what constitutes distance learning, online learning, or blended learning. However, generally, online learning includes a diversity of settings, comprising fully online, digital, blended, and supplemental learning (Rice & Dykman, 2018). Distance education is a type of education where the teacher and students are physically separated, and different means are used to communicate (Kiryakova, 2009). Conrad (2006) reported that the term distance learning is considered synonymous with terms including online learning, e-learning, and virtual learning. Consequently, the terms "online", "remote" and "distance" learning may be used interchangeably. In blended learning, pupils are provided online learning alongside face-to-face traditional learning (Tindle et al., 2017). There has been much confusion over terminology regarding distance learning during the pandemic. Well-designed distance learning is not the same thing as the hastily conceived "remote learning" that occurred at the outset of the pandemic. Remote learning seems to refer to emergency measures that included the instruction to move teaching from physical educational settings to homes (Hodges et al., 2020). So, in the current study, the term "remote learning" was considered more accurate than distance learning.

During the use of these different learning scenarios, it is vital to support students with disabilities access to the curricular content to both enhance their learning and support their educators in the application of specific instructions when educating their students (UNICEF, 2020; Tindle et al., 2017). Additionally, it is vital to consider achieving inclusive teaching that identifies and fits the learning needs of all learners, as well as recognizing that students with disabilities have distinct learning needs (Bjekiü et al., 2014). Furthermore, it is vital to consider adopting Universal Design for Learning (UDL), an instructional strategy that introduces a framework for meeting all student's needs (O'Hanlon, 2005). However, a lack of teachers' competencies in the field of assistive technology (AT) has been reported in the literature (e.g., Zavaraki & Schneider, 2019). Teachers' competency is vital to the success of DL. Online education is centered on a set of technical standards of teacher competencies in terms of the employment of information and communications technology (ICT) and online learning (Bjekiü et al., 2014). Smith and co-authors (2016) reported that teachers had numerous requirements in their preparation regarding work in online learning. It was reported that they often did not have the ability to tailor instruction to meet individual needs.

Modern assistive technologies pave the road for students with disabilities to do tasks that were hard or impossible to do without them. The literature has reported the effectiveness of technology in academic domains (e.g. Al-Zboon, 2020; Al-Zboon, 2019a; Al-Dababneh & Al-Zboon, 2020). Thus, the use of AT is important to create effective online learning. For example, Hecker et al. (2002) reported that the use of assistive technol-

ogy helped students with attention deficit disorders to increase their attentiveness and to read with reduced tension and fatigue.

Online learning technology can also support the inclusion of students with disabilities (Fichten et al., 2009). Online learning offers the opportunity for students with disabilities to join traditional classes (Debenham, 2002). For example, online learning addresses barriers that students with disabilities encounter in traditional studies, such as physical and mental isolation, fatigue, difficulty with handwriting, and accessibility issues (Debenham, 2002).

There is emergent literature that is related to online learning for students with disabilities in general, but the research that covers the topic during the coronavirus epidemic is scarce. Abrami et al. (2006) reported that there is little available knowledge regarding the online learning needs of students with disabilities. One study indicated that students with disabilities thought they were learning and being successful within an online school. Most students reported that they liked the flexibility of online learning, staying at home, and working online since they enjoyed the increased interaction with their teachers in online learning (Harvey et al., 2014). Fichten et al. (2009) reported that online learning problems of students with disabilities are related to issues regarding the accessibility of websites, a lack of required assistive technology, problems downloading files, and insufficient competency of students and educators. Beck, Maranto, and Lo (2014) found that families of students with disabilities reported that online school is satisfactory and effective. Students reported that online classes were digitally recorded, which allowed them to view and review the material until they achieved mastery. Other research has indicated that there are no significant differences in reading achievement resulting from students with disabilities taking part in blended learning in comparison to their classmates without disabilities (Pace & Mellard, 2016).

Burdette, Greer, and Woods (2012) revealed an increase in the number of USA states that provide online learning and promote students with disabilities' involvement in online learning while revealing the existence of obstacles to the effective involvement of students with disabilities in online learning. These were related to the required accommodation of students with disabilities to provide access to the curriculum to achieve success in online learning. Related literature reported the following obstacles to the effective involvement of students with disabilities in online learning: lack of access to technology or the internet (Mustaf, 2020; McClain-Nhlapo, 2020), teacher-related barriers (UNICEF, 2020; UNESCO, 2020), an insufficient number of modern devices (Esentürk, 2020), and family conditions (Mustaf, 2020; Esentürk, 2020).

However, Palestine refugees encounter immense challenges, especially Palestinian refugees with disabilities, who would face compounded challenges (UNRWA, 2016). This study investigates the status of remote learning of students with disabilities in Palestinian refugee camps in Jordan during COVID-19. The significance of this study is apparent from its sample and setting; the period (COVID-19 emergency) and the modern hot topic (remote learning and using technology with students with disabilities). Greer, Rice, and Dykman (2014) reported that there was a deficit in terms of the availability of peer-reviewed and published research on online learning and students with disabilities.

Jordanian context

Among the Middle Eastern countries, Jordan is considered a leading country regarding services for persons with disabilities, due to Jordan's advances in terms of policy and regulatory frameworks, the provision of services, and research (Al-Zboon, 2019b).

The percentage of individuals with severe functional limitations has been identified to be 2.7 % (Jordanian Department of Statistics, 2015). A total of 746 schools (out of 5600) have students with disabilities; 7,239 students with disabilities are registered in Jordanian schools; while 35.3 % of persons with disabilities are illiterate (ESCWA League of the Arab States, 2014).

In early March 2020 after discovering the first COVID-19 cases, the Jordanian government acted quickly and decisively to control the spread of the infection, applying a compulsory closure to most governmental and private institutions. This affected the learning of many school students (Małachowska et al., 2002; Al Heiwidi & Jones, 2020). Jordan moved to remote learning to teach the core subjects of the curriculum using the learning platform "Darsak", two informal TV channels, and Noorspace. Later, the Ministry of Social Development followed up with special education centers to confirm the continuation of educational services for students with disabilities through the development of remote learning programmes in cooperation with their families.

Palestinian refugee camps

Palestinian refugees are considered the largest refugee population in the world. In Jordan, UNRWA recorded 1.9 million Palestinian refugees, 17 % of whom live in 10

refugee camps (UNRWA, 2008). It is estimated, based on international figures, that at least 15 % of these refugees have a disability (UNRWA, 2016). However, one research article reported that 3 % of the persons in the Palestinian camps have a disability (GAPAR & UNRWA, 2005). Palestinian refugees with disabilities have the same basic human needs as everyone else, but in addition, they have particular needs related to their disability, which are to be included in services and involved in mainstream processes (UNRWA, 2016). GAPAR and UNRWA (2005) reported that 63 % of students with disabilities aged between 10-14 attend school, however, this percentage decreases in older age groups.

Research questions

This study addresses the following research questions:

- What is the level of teachers' competencies and prepare for the implementation of DL?
- In which areas were remote learning applied and effectively used?
- What are the barriers to and negative attitudes toward DL?

METHODS

Design

The current research uses qualitative design to deeply understand phenomena in a specific context (Patton, 2001). The phenomenological method is used to describe an event or phenomenon. This method was considered to be the most appropriate to answer the research questions and to gather participants' perspectives and feelings about remote learning during the pandemic.

Participants

The purposive sampling technique was adopted in this research. This involves identifying and selecting informants who are especially knowledgeable in the field of research and are most able to answer the research questions (Cresswell & Plano Clark, 2011). For this study, the Higher Coordination Committee for Community Rehabilitation Centers for the Disabled in Refugee Camps in Jordan was contacted and asked to provide a list of the teachers of students with disabilities and the centers at which they studied.

The study sample consisted exclusively of teachers working in special education centers in Palestinian refugee camps in Jordan for the second term of the academic year, 2019/2020 (between 18 April and 3 July 2020). Twenty-five teachers were interviewed; this number represented 29% of the total number of teachers. Participant names were changed to retain their anonymity. Participants were self-nominated, based on a written open invitation to participate in the study. Their ages ranged from 24 to 56 years and their years of experience ranged from two years to 27 years. Participants' qualifications are as follows: Master's degree (1), Bachelor's degree (9), Diploma (6), Secondary school (10). The participants were teachers of students with intellectual, hearing, visual, or motor disabilities. These students benefit from formal, remote learning that is conducted in Jordan to teach the core subjects of the curriculum through the use of the "Darsak" platform and two educational TV channels. The teachers contact students' families via available social media. A group of teachers was selected for the study, each teacher having met the following criteria: they were required to be employed in the Centers for the Disabled in Refugee Camps in Jordan; they had to have a minimum of two years of teaching experience in the Centers for the Disabled in Refugee Camps in Jordan, and they had been teaching in these centers since the beginning of the pandemic.

Data collection

Semi-structured interviews were conducted as described by Kvales' stages (1996) to investigate the participant's views about DL. The researcher developed interview schedules (see Appendix 1) based on a review of the online learning literature. Nine open-ended simple structures and easy-to-understand questions were used. Participants' consent was obtained and tape-recorded interviews. Relevant notes and comments were documented throughout the interview. Three research assistants carried out the interviews after exposure to a training programme.

Data analysis

Interviews were transcribed verbatim for analysis of the raw data. Thematic analysis following a system of coding the transcripts was adopted as described by Holloway and Todres (2006). Using inductive coding techniques, the following steps were used: seeking patterns via an inspection of emergent, interconnecting, and exegesis themes and meanings, and selection of quotes using the participants' exact language from the original data that illustrate, clarify, and support the themes. To ensure the truthfulness of the main themes, a peer review technique was employed. Reviewers revised the themes to achieve an almost complete agreement between the reviewers. The researcher and the two experts in qualitative research examined the participants' transcripts to identify

Table 1. **A sample of interview data with example codes**

Text	Example codes
Many Jordanian students live in small houses, so there are no private places for the students to receive teaching, and the mothers of students with disabilities could have other children who needed to use the mothers' telephones or family computers if they were available.	***Barriers*** **Financial barriers** a lack of modern devices in the home **Family conditions** the physical environment of family houses
I did not receive any pre- or in-service courses related to remote teaching of students with disabilities. However, I received courses that included one chapter related to the use of technology.	**Teacher preparation level in terms of remote learning** More courses related to online learning are required

recurring themes and to determine unique and common themes (Grbich, 2007).

Ethical considerations

Principles for Research Ethical Considerations were followed during the research to protect the dignity, rights, and welfare of research participants. Therefore, the Declaration of Helsinki and the IRP principles in Hashemite University were considered. Informed consent, protection of participants from harm and discomfort, data confidentiality, data protection, and integrity principles are guaranteed.

RESULTS

The effectiveness of OL

Twenty-one (84%) participants think that remote learning is not an effective way of teaching SWD. However, four (16%) participants felt that it is an acceptable way. From the interviewees' responses, it can be noted that the participants mostly felt that remote learning isn't suitable as there isn't a learning platform for students with disabilities, and the common method of implementing remote learning is WhatsApp (22). Five (20%) participants mentioned using Facebook (3) and telephone calls (2) as methods to communicate with families.

Participants identified the main goal for using these methods as following up on students' homework and sending illustration videos and voice recordings from teachers to families. Then, the family sends videos, photos, and voice recordings documenting the students' performance. Some of the problems that participants noted in using remote learning are expressed in the following selected excerpts.

Nadia stated: *that WhatsApp is the only method available in this pandemic as it is easy to use and cheap. Therefore, we depend on WhatsApp groups as well as telephone calls to communicate with students' families.*

Rasha: *remote learning with students with disabilities in Jordan isn't effective as it aims to give the family advice to teach the child and follow up using WhatsApp. However, there isn't a specific platform for students with disabilities.*

Sadeq: *remote learning is a convenient way of learning for children with disabilities and families in order to overcome transportation problems and provide learning for the child in his/her natural environment (at home). Its effectiveness depends on the cooperation of the family and its follow-up with its child.*

The participants mentioned varied domains of learning using remote learning when asked. The dominant domain is the academic domain. Twelve (48%) teachers mentioned simple writing and reading skills (7), cognitive skills (7), language and communication skills (6; i.e. eye contact, communication, breathing, pronunciation, speaking), and maths (5). Six (24%) teachers mentioned independence skills, fine motor skills, extracurricular activities, advice regarding teaching, behavioral modification, and facing psychological stress.

From another angle, teachers are asked about the achieved goals of remote learning during the coronavirus pandemic. It was evident from the analysis of interview transcripts that six (24%) participants thought that no goals were achieved during DL, while ten (40%) described achieving some goals. The achieved goals were: Arabic language goals (reading and writing letters, simple words and sentences, and word analysis) and maths goals (simple addition and subtraction, numbers, weekdays, colors, and shapes). Other achieved goals were: perceptual, hand washing, self-dependence of the child when using media, communication and breathing practices, behavioral control using activities, reducing family psychological stress, independent walking, fine motor games, and handicrafts. Eighteen (72%) participants stated that the best-achieved goal is family involvement in the training process. Some of

the learning domains and goals that participants noted in using remote learning are expressed in the following selected excerpts.

Nada elaborated that "*achieved goals are lacking in comparison to traditional learning but I think that family involvement in the training is the vital achieved goal. Actually, it is a big achievement*".

Rania: *"I think the most important areas that were focused on during distance learning during the Corona period were reading, writing, and math as basic skills for children with disabilities. Emphasis was also placed on communication skills and breathing exercises to help develop pronunciation".*

Barriers to, and negative attitudes toward, online learning

In the interviews, the participants reported many barriers that constrain the effective use of OL. The main barriers are internet connection issues followed by a lack of modern devices in the home of students with disabilities. Other barriers are related to teachers (lack of teachers' technological competency and OL, teachers' fear that technology may replace them in education, and the teacher not being convinced of the effectiveness of using technology). Financial barriers are effective barriers to the use of OL. These barriers are related to the high cost of the required material and resources. Family conditions to remote learning include the seriousness of parents in applying activities, the physical environment of family houses, a lack of family interaction, a lack of mothers' time, disinterest of the family in trained skills, and competency when using the technology and OL. Some of the barriers that participants reported are expressed in the following selected excerpts.

Naseem: *"there isn't financial support for the family to be able to cope with the demand of remote learning, there aren't devices or free internet packages, especially in the context of the economic problems due to the coronavirus pandemic".*

Shatha: *"many Jordanian students live in small houses so there are no places of privacy for the students to receive teaching, and the mothers of students with disabilities could have other kids who need to use the mothers' telephone or family computer -if it is available".*

Analysis of the interview transcripts showed that Jordanian special education teachers generally hold negative attitudes toward OL. Eleven (44%) considered it unsuitable for students with disabilities. Five (20%) participants considered remote learning itself to be a challenging method for learning as it does not account for individual differences and lacks the use of sensory means and direct interactions with students with disabilities. Four (16%) participants suggest adopting blended learning by going to school-specific days a week.

Five (20%) teachers mentioned the negative attitudes of the Jordanian community towards OL. Ten (40%) participants also described the negative attitudes of families of students with disabilities towards DL, as it increases the family burden. The following selected excerpts clarify these attitudes.

Muna: *"remote learning isn't suitable for students with disabilities as they need direct interaction with teachers to provide physical prompts during training, and they need direct interaction with other professionals. This is especially challenging as there isn't adequate preparation provided for students, families, and professionals to use remote learning".*

Lama: *"families of students with disabilities considered remote learning a burden. They sent their children to SE centers for a rest from dealing with them and to give the responsibility to schools and teachers".*

Special education teacher competencies and preparation level in terms of OL

The data analysis revealed that seventeen (68%) participants perceive themselves as holding a low level of competence in terms of implementing remote learning in the education of students with disabilities. Moreover, the findings showed that all the participants stated that special education teachers need training to appropriately use remote learning training.

Participants were asked if the special education teacher education programme prepares them on the topic of remote learning and whether they feel it offers enough courses. Analysis of the interviews indicated that the participants felt that their preparation programme is inadequate and that more content courses related to remote learning are required. Additionally, ten (40%) teachers felt that they are lacking competency in remote learning and the use of associated technology. Some of the deficiencies that these teachers noted in their current preparation are expressed in the following selected excerpts.

Salma declared: *"I think that I don't have the required knowledge and skills to use remote learning. However, special education teachers must receive in-depth training in the field of remote learning".*

Maha: *"I didn't receive any pre- or in-service courses related to remote learning with students with disabilities. However, I received courses that have one chapter related to using technology".*

Enhancement of remote learning: Perceived prepara-

tion of needs and suggestions

Analysis of the interviews revealed that the participants reported many training needs for enhanced use of remote learning. The most frequent training needs for teachers are how to deal with families of students with disabilities, effective methods of delivering information to students with disabilities using remote learning, social media, and tech and applications, and the teacher's role as a facilitator. The most frequent training needs for families are to understand the family's role as a trainer, improvement of collaboration and communication skills and teaching with love, the use of social media and tech and applications, and raising family awareness regarding the importance of remote learning.

Other suggestions to improve the quality of remote learning made by participants include: addressing internet coverage problems, provision of free Wi-Fi services in the country, allocation of suitable modern tools and advice, encouraging direct interaction between teacher and students using video calls during teaching, improving teachers attitudes towards remote learning, releasing a code of ethics regarding remote learning, launching specific platforms for students with disabilities, and adopting blended learning by allowing teaching in school some days a week to complete some specific training needs, such as speech-language therapy. The following selected excerpts show some of the needs and suggestions that these teachers noted.

Raja: *"The most important obstacles that we faced during distance learning were that it was sudden and without prior preparation and training for teachers, families, students, administrators, and supervisors. I believe that to improve distance learning, it is important to train all stakeholders and provide infrastructure"*.

Samar: *"For the success of distance learning, it is necessary to overcome the financial obstacles related to the provision of free good internet access and modern equipment, the provision of distance learning platforms for children with disabilities developed by specialists, and the training of students and families"*.

DISCUSSION

The effectiveness of remote learning

Based on the study results, many lessons can be learned. It is vital to promote the implementation of effective applications of remote learning in special education contexts. One notable finding is that teachers believe that remote learning is not an effective way of teaching students with disabilities. This is a convincing result, as the methods adopted for teaching students with disabilities aren't enough to achieve effective remote learning. Teachers used multiple means of communication (WhatsApp, Facebook, phone calls). This seemed to be an effective but temporary strategy to adapt quickly to the situation at the outset of the pandemic. However, remote learning can account for individual differences only if differentiation strategies are employed by teachers. By utilizing WhatsApp as the main method of communication, there was no interactive platform for students with disabilities. The repurposing of WhatsApp for remote learning is intriguing. Literature indicates widespread use of the app for distance learning worldwide during the pandemic. UNHCR (2020) reported that presently WhatsApp is the most popular application among both teachers and students for education during the COVID-19 emergency. Etim, Udosen, and Ema (2016) indicated that WhatsApp has a significant effect on students' performance as well teachers should be skilled in the usage of WhatsApp chat rooms in their teaching. This dependence on WhatsApp can be attributed to the fact that it is easily available, cheap, and a simple method to communicate with both students and their families in this period, especially as there isn't a distance learning infrastructure in many countries. Additionally, as mentioned by Rice & Dykman (2018), using distance learning to teach students with disabilities is an emergent approach. Therefore, there is a vital need to develop a learning platform for students with disabilities and build the infrastructure for distance learning to keep up with modern international trends in education.

Overall, this study indicated that the issue was not that online learning, in general, was an ineffective approach for students with disabilities, but that the teachers were unprepared and there was a lack of access to digital tools that were appropriate for the learners. Additionally, family and teacher enthusiasm were huge factors in whether students did or did not benefit from online learning, rather than the students' characteristics or the technique that was used.

Nevertheless, the participants described varied learning domains introduced to students with disabilities using remote learning, and many mentioned achieving some of the goals of remote learning during the pandemic. The achieved goals are from the following domains: Arabic language, maths, perceptual skills, independence, communication and breathing practices, behavioral control using activities, reduction of family psychological stress, and motor skills.

The results of this study confirmed findings made by (author) regarding the use of technology and remote learning with students with disabilities. However, this is a promising finding regarding using remote learning with students with disabilities. Barrett (2011) stated that currently, e-learning for students with disabilities is already prevalent. Modern technologies pave the road for students with disabilities to do tasks that were hard or impossible to do without. Online learning technology can also support the inclusion of students with disabilities (Fichten et al., 2009) and offers opportunities for students with disabilities to join traditional classes (Debenham, 2002).

Most participants highlighted that the best-achieved goal has been family involvement in the training process. This is a promising finding as many studies (e.g., Al-Zboon, 2016) revealed a lack of family involvement in Jordanian special education. Research in the literature reported that without active family involvement in the learning process introduced to students with disabilities, learning outcomes for either the student or the family would not be completed (Diken, 2009).

Some participants were frustrated that no goals were achieved during OL. The interpretation of this finding is that the essential principles of effective remote learning, such as family collaboration, enthusiasm, and conditions of that group of students with disabilities were not properly established.

Barriers to, and negative attitudes toward online learning

Teachers reported many barriers that constrained achieving effective OL. These barriers are internet connection issues, insufficient modern devices in the homes of students with disabilities, teacher-related barriers, financial barriers, and family conditions. These results confirm the findings of a great number of previous studies in this field that reported these barriers: lack of access to technology or internet access (Mustaf, 2020; McClain-Nhlapo, 2020), teacher-related barriers (UNICEF, 2020; UNESCO, 2020), an insufficient number of modern devices (Esentürk, 2020), and family conditions (Mustaf, 2020; Esentürk, 2020). Additionally, UNICEF (2016) reported that Palestinian students with disabilities in the camps face several other problems, including poverty and financial issues, and negative community attitudes and beliefs as they are considered a burden and a source of shame.

One notable finding of this study is the negative attitudes toward remote learning from teachers, families of students with disabilities, and the community in general. This is logical as remote learning is a new approach in the Jordanian community that requires increased community awareness, capacity, readiness, acceptance, and competency for it to be used effectively. This result concurs with previous worldwide studies (e.g., Smidt et al. 2014; Kisanga, 2016).

Special education teacher competencies and preparation level in terms of OL

The data revealed that most participants perceived themselves to hold low levels of competence in terms of implementing remote learning in the education of students with disabilities, that their preparation programme is inadequate, and that they desired more content and pedagogy courses that relate to OL. This result is expected as remote learning is a new trend in education; decision-makers should consider including remote learning for students with disabilities in teachers' preparation programmes. However, it is unlikely that teachers were prepared for online learning at the start of the pandemic. A teacher's competency is vital to the success of online learning (Zavaraki & Schneider, 2019). Online education is centered on a set of technical standards of teachers' competencies in the employment of ICT and online learning (Bjekiü et al., 2014).

Enhancement of OL: perceived preparation in terms of needs and suggestions

Teachers of students with disabilities highlighted many training needs for both teachers and families that could enhance the effectiveness of OL. It is therefore of critical importance that decision-makers consider these training needs in pre-service and in-service preparation programmes for teachers, as well as training programs for families.

Other suggestions mentioned by participants to improve the quality of remote learning include: addressing internet coverage problems, provision of free Wi-Fi services in the country, providing suitable modern AT, increasing direct interaction between a teacher and students using video calls during teaching, improving the attitudes of teachers, releasing a code of ethics regarding OL, launching specific platforms for students with disabilities, and adopting blended learning.

These suggestions imply the importance of providing enough materials and support to improve the chances of remote learning success and increase the effective participation of students with disabilities in the process. Guglielman (2010) reported that using e-learning in the education of students with disabilities as assistive tech-

nology is valuable if it is designed in a way that increases students' participation in curriculum activities and class subjects.

CONCLUSION

This study documented lessons learned during the pandemic, which could be applied after it had ended. The pandemic has highlighted inequities in technology access and teacher knowledge, which provides an impetus to address such inequities in the future. This study revealed using remote learning with students with disabilities is a new educational concept that has been met with negative attitudes. The majority of teachers think that remote learning is not an effective way of teaching students with disabilities. Furthermore, most special education teachers perceive themselves as holding a low level of competence in terms of implementing remote learning in the education of students with disabilities. There are many barriers to achieving effective OL. The decision-makers have to face these barriers by collaborating with donating parties. There is a vital need to deal with teacher deficiencies through pre-and in-service training in the implementation of OL. There is a need to reform the process of remote learning for students with disabilities in Jordan in light of practices that have been adopted internationally in the field of remote learning and emerging educational technologies. Examples of these practices are dependence on blended learning; engagement of students in collaborative instruction; family involvement; improvement of teachers' competencies; and AT investment.

LIMITATIONS

Despite the importance of this study to fill the gap of knowledge on this topic, it has some limitations that restrict the generalization of the findings. One was the sample size, which did not represent all teachers of students with disabilities in Jordan. Another limitation is related to methodology, as only the interview technique was utilized. This technique relies on the accuracy and honesty of participant responses to the questions. Future studies should investigate this topic in other settings, and stakeholders using other methodologies to achieve a deep understanding of remote learning for students with disabilities as a new trend in education.

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APPENDIX (INTERVIEW QUESTIONS)

- Did you participate in distance learning for children with disabilities during the Covid-19 pandemic?
- What is your evaluation of and how satisfied are you with distance learning?
- What was the method you used to communicate with the child (Facebook, WhatsApp, a distance learning platform ....)? What are the advantages of these methods?
- From your point of view, what is the best technological means for distance learning: Facebook, WhatsApp, and distance learning platforms?
- What areas of training did you provide for children in the distance learning period?
- What goals were achieved with the children?
- What were the obstacles that you faced during distance learning?
- What are your training needs to improve distance learning for children with disabilities?
- What are your suggestions to improve distance learning?