



The Utilization of Virtual Kindergarten Application Among Students with Disabilities: Exploring Accessibility, Barriers; Families' Perspective

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The early school closure in response to the COVID-19 pandemic had been a great challenge for students with disabilities and their families. Many students with disabilities rely on in-person support and services to access the curriculum. The transition to online learning presented new challenges for these students. In order to support students with disabilities during this time, countries such as Saudi Arabia developed virtual kindergarten applications. The current study aimed to evaluate the usefulness of the Virtual Kindergarten (V.K.) application designed for special children in KSA. This study involved semi-structured virtual interviewees consisting of three main themes, i.e., access to the V.K. application, obstacles to using V.K., and strategies to increase its usefulness. A comprehensive thematic analysis was performed to draw valuable insights into the V.K. The results revealed that 70.6 % watched recorded lessons on other platforms, whereas 35.0 % attended classes using V.K. with active participation. Concerning obstacles, most parents had difficulty controlling their kids while taking online lectures on V.K. All the participants believed that there should be a support system available to the parents from teachers with the V.K. platform. To conclude, V.K. has the potential as a tool for communication and collaboration. However, there are some obstacles to using it effectively. By addressing these issues, V.K. can become an even more powerful tool for students with disabilities.

Keywords: virtual kindergarten, special education, COVID-19, Saudi Arabia, families' perspective

INTRODUCTION

Students with disabilities have been recognized to face many problems during the pandemic covid-19 because of the introduction of e-learning in the Kingdom of Saudi Arabia because they do not have access to the internet as well as have to lack educational support from their parents and teachers to get the required educational needs. However, students with disabilities do not have a significant level of skills accordingly to get an education online because of their disabilities (Catalano et al., 2021). Thus, students find it difficult to understand their lectures online because teachers have low teaching methods for preparing lectures (Tonks et al., 2022). Homestay- issues by the government cause serious effects on students' health and

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mental condition because they lose their abilities due to uncertainties due to the pandemic of covid 19 (Gin et al., 2021). The issues generated by the transition of the education system from physical to e-learning and online systems may affect the education of students with disabilities because the environment they get at institutions is not provided at home. Parents also face financial issues in buying new devices to attain sustainable education facilities for their children which would ultimately create problems for the teachers in teaching sufficient curriculum (Rabbitt & Smith, 2021). The school closures have also had a significant financial impact on families, as many have had to pay for childcare or private tutoring (United Nations, 2020). The pandemic has forced students to confront various challenges, including mental health, that they may have never had to face before. The pandemic has also exposed the deep inequities that exist within the education system (Panakaje et al., 2022). The decision to close schools during a pandemic is a difficult one. On the one hand, school closures are viewed as a helpful technique for stopping the spread of illness and preventing infection. On the other hand, children experienced social and physical isolation at home (Bessell, 2022; Engzell et al., 2021; Vlachos et al., 2021).

Saudi Arabia quickly responded to the COVID-19 outbreak after the first case was discovered in Saudi Arabia on March 10, 2020. The Ministry of Education initially closed schools for two weeks, later shifting to online education through the Noor platform and other comparable technologies (Alsamiri et al., 2022). Through technical instruments and Internet-based education systems, a remote education procedure has been created to ensure the education of school-age children worldwide during the pandemic era (Tadesse & Muluye, 2020). The Ministry of Education, in collaboration with other ministries and international bodies, has continuously improved its effort to provide all students with various flexible options to access quality distance learning through National eLearning Center and KSA online resources (<https://nelc.gov.sa/en/nelc>). The successful implementation of eLearning platforms is hindered by factors such as bad Internet connections, lack of smartphones, or lack of televisions (World Bank, 2020). Furthermore, UNICEF published a report before the COVID-19 pandemic that not all students had access to computers, iPads, and the Internet (UNICEF, 2022).

Most school districts, especially those serving rural or low-income children, lack resources for distance learning and those suffering from disabilities (Bessell, 2022; Moensted, 2022). The literature underlines that children with disabilities or disadvantages face a considerable threat because remote education emerges as the sole format capable of addressing their educational requirements (Makuyana, 2022; Mohammed Ali, 2021). The pandemic significantly impacted special education by leading to a reduction in the number of essential staff, including teachers, psychologists, and therapists. The unprecedented challenges posed by COVID-19 prompted budget constraints and logistical hurdles, forcing educational institutions to make difficult decisions about resource allocation (Averett, 2021; Lombardi et al., 2022). Saudi Arabia was keen to provide the best facilities to disabled students during the pandemic. The Saudi government established a General Directorate for Special Education (DGSE) to improve special education programs further and develop policies for students with

various disabilities, including hearing, intellectual/learning disabilities, speech problems, autism, and behavioral issues. They also include gifted and talented students in this policy to save them from facing different issues in education (Ministry of education, 2020). Saudi Arabia's DL experience could be of practical use to other devolving and semi-developed countries working to make DL accessible to students with disabilities. Virtual kindergarten (V.K.) is a recent Saudi application launched for free via Google Play and the Google App Store platforms in September 2020. This application adapts the DL methodology and provides digital education content to kindergarten teachers who teach children between ages three and six. The application includes educational content concerning Islam, learning approaches, cognitive processes, health and physical development, social-emotional standards, patriotism, social studies, and linguistic development in reading and writing. In addition, it aims to build and develop children's capabilities and skills by using cartoon images and videos and providing multiple games suitable for their age group, teaching them about social values in a fun, motivating environment. Lastly, this application allows parents to follow their children's progress via reports (<https://www.moe.gov.sa/en/Pages/default.aspx>).

National literature includes studies on the psychological effects of the pandemic on schooling (Al-Samarrai et al., 2020). Covid-19 has not only impacted students' abilities but also challenged teachers on the shifting mode of education from traditional to online. Strong positive differences were observed for teachers' abilities while shifting from the traditional mode of teaching to online education in terms of various criteria. Notably, teachers have demonstrated enhanced technological knowledge, showcasing proficiency in navigating digital tools and platforms. Moreover, a positive shift has been observed in pedagogical content knowledge, reflecting teachers' adaptability in translating subject matter expertise into effective online instructional strategies (Al Kandari & Al Qattan, 2020; Ismael & Al Mulhim, 2022). On the other side, the pandemic adversely affected the parents of students with disabilities. Families went under stress suddenly after the incidence of Covid-19 outbreak to provide individual facilities to their kids after schools were closed for an indefinite period. During the pandemic, a critical shortfall in support for children with special needs within the school system became apparent (Rababah et al., 2022). The available literature indicates a notable gap in comprehensive research examining the experiences of students with special needs as they navigate distance education at home during the pandemic. According to the study, practitioners may be able to prescribe remote education for students with special needs. Many families worry that schools won't start in the next academic year, so developing more distant education institutions for kids with special needs is vital (Mete Yesil et al., 2022). COVID-19 impacts the social relationships as well as intellectual behavior of students with their society (Li et al., 2020). Students have high socio-emotional behavior during the COVID-19 period because staying at home disturbs their mental as well as physical health (Creswell et al., 2021).

The effect of covid 19 on students with disabilities was addressed by Pham & Ho (2020) who emphasized the impact of the pandemic on the educational system and linked the interaction of e-learning with other modified technologies. AlAteeq et al.

(2020) concluded the mental health of students with disabilities is a result of covid effects because it can cause stress due to loneliness, parents' behavior, and worries about children's education. This study was further modified by Aboud (2021) who addressed the challenges faced by disabled students during covid including mental, physical, and social obstacles. She also addressed some strategies to overcome the challenges faced by students. The previous studies support online education for students with disabilities as it can affect the social behavior of students by restricting them in houses, their free movement, and their perceptions towards education. Therefore, this research seeks to assess the continuity of inclusive special education for children with disabilities amid the ongoing pandemic. How do children with disabilities navigate access and utilization of Virtual Kindergarten app at home during the pandemic? What challenges arise for students with disabilities engaging in virtual classes throughout the quarantine? What strategies can parents adopt to help their children continue their education in Virtual kindergarten during the pandemic?

Research Approach

A phenomenal design was followed to generate an in-depth analysis and description of how online education procedures were carried out for children with disabilities when schools were closed due to the COVID-19 epidemic (Creswell & Poth, 2016; Mertens, 2019). This approach provides a comprehensive account of how people who observe a phenomenon conduct their lives (Moustakas, 1994). The families of children with disabilities were also considered the primary caretakers during the trying times by providing one-on-one support. The parents were asked to share their children's experiences of remote learning with the Virtual Kindergarten application through the COVID-19 epidemic.

METHOD

Instrument

To fulfill the study objectives, the researchers employed a methodological approach centered on semi-structured interviews for data collection (Creswell & Poth, 2016; Given, 2008). There are a variety of different interviewing techniques that can be used in qualitative research. Some common techniques include in-depth interviews, focus groups, virtual meetings, and participant observation. Each of these techniques has its own strengths and weaknesses and can be used in different ways to glean different types of information. In order to gain a better understanding of how the V.K. application is being utilized by students with disabilities, their families and carers, as well as explore any barriers and accessibility issues, face-to-face virtual interviews were conducted by the ZOOM meeting tool due to effective COVID-19 restrictions by the government (Crabtree, 1999; Markham, 2004).

Participants

The deliberate sampling approach was used to choose the research participants because it is a widely used sampling technique (Mertens, 2019; Miles & Huberman, 1994). The potential interviewees consisting of the families of children with disabilities who completed their preschool education via Virtual Kindergarten, were invited to participate in the study through an invitation letter detailing the goals and scope of the

study. Seventeen families of children with disabilities who completed their inclusive education responded positively when asked if they would volunteer to participate in the research. Participants' identities are withheld here in compliance with study ethics.

Interview procedure

The face-to-face virtual interviews involving families of the students with disabilities were conducted on the pre-decided date and time were started with a general introduction that included personal and topical issues. The interviewees were first guided about the V.K. application and how it can be used to provide opportunities for their children's learning and development. The interview was conducted with a set of questions that explored the interviewees' opinions on current issues related to accessing the Virtual Kindergarten application, obstacles faced by the students while operating V.K., and strategies to increase access to V.K. Furthermore, the interviewees were allowed to veer off the questions a bit to better express their perceptions and feelings on the matter. All interviews took place between September 21, 2021, and October 10, 2021. The interviewee's responses were recorded by note-taking and audio-video tapping. It is interesting to note that none of the interviewees spoke English as their first language. The interviews were conducted in Arabic to get an accurate understanding of the participants' experiences. The scripts were finally transcribed to English for data analysis. The interview data was stored safely so that we could later analyze it to look for themes and sub-themes.

Data analysis

The data collected were analyzed using an inductive methodology. Digital voice and brief note recordings were used to save the information gathered during the virtual interviews. Following the semi-structured interviews, the digital audio recordings underwent a transcription process that involved the conversion of spoken content from the interviews into written texts. The data was processed through a thematic content analysis using Nvivo v 14.0, and mind maps were developed to visualize the data. The data gathered from this research was analysed through content analysis, which is a research method that involves organizing stakeholders' opinions on a particular topic. It is an objective way of gathering and analyzing qualitative data to detect trends, patterns, and themes in their responses. We used a systematic approach to coding — or classifying — key concepts so that we could identify similarities and differences between the participants' responses (Creswell & Poth, 2016; Given, 2008; Miles & Huberman, 1994). A statistical software package, SPSS v 25, was used for the descriptive analyses of the interview data.

Validity, dependability, and morality

To ensure the robustness of findings, the current research employed a diverse set of criteria to evaluate both the validity and reliability of the study. In pursuit of the research objective, a reliability analysis (Reliability = consensus / (agreement + disagreement) × 100) was conducted using the agreement percent approach developed by Miles and Huberman (1994). This methodological framework posits that ensuring dependability in a qualitative study necessitates a minimum of 90 percent agreement between the expert's judgments and the researcher's assessments. The reliability analysis

revealed a 99% chance that the codes would agree. To enrich the depth and authenticity of the research, in-depth explanations were meticulously crafted through the direct quoting of participants' perspectives (Creswell & Poth, 2016; Miles & Huberman, 1994). When necessary, we secured the involvement and approval of the participants as a means of adhering to the ethical guidelines governing research. Also, the people who took part in the study were reminded that they could quit at any time if they wanted to.

To ensure dependability, several data gathering methods (triangulation method) were utilized. Member checks of the acquired data and interpretation were performed, and the processes within the study were detailed.

FINDINGS

Master Theme 1: Accesses Virtual kindergarten

The mind map sorted out access to V.K. into further two sub-themes i.e., use of V.K. and V.K. maintenance. There were mixed responses on the use of V.K. as most interviewees stated that their children used to watch recorded videos. In contrast, others viewed their children attending classes using the V.K. application with active participation and shared homework on the V.K. platform. Some participants highlighted that the kids used the V.K. application without active participation (Figure 1). The mind map demonstrated that regarding the maintenance of V.K., no support on V.K. was available from the V.K. support staff whenever the students required assistance. Also, all participants believed that they received no prior training for the use and maintenance of V.K. Most of the participants reported that their kids got education from private education institutions. The descriptive statistics of these sub-themes are discussed under each subheading.

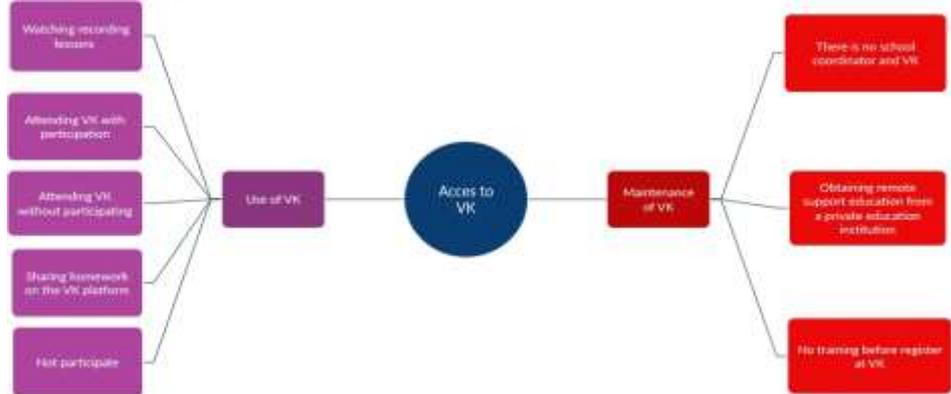


Figure 1
Mind map showing access to V.K.

Use of Virtual Kindergarten

The frequency distribution revealed that 70.6 % of remote education users saw recorded classes on the Noor platform. Interviewee # 10 stated, "we watched the recorded lesson at the available time for parents and pupils." 35.0 % of interviewees reported taking V.K. classes online and watching taped lectures." V.K. teachers provided online

instruction. "We committed to being on time for class and attempted to encourage our children to engage." (interviewee # 5). In addition, 47.0 % of participants stated that they attended V.K. but did not participate. They said they cannot participate due to a lack of technological capabilities." "His child has deficiency attention; therefore, that's made him less participative," said interviewee # 2. However, 58.9 % of parents indicated that they did not participate and fell short in aiding their children's academic achievement due to their low educational level (Table 1). "The teachers distributed homework over a social media group," interviewee # 1 stated. "My kid just finished elementary school and didn't understand anything." I'm not sure whether he could do it.

In addition, it was presumed that teachers created, photographed, and emailed these worksheets to students when they could not accomplish them. According to one of the participants, the teachers did not verify to see whether the students' answers on the test were accurate or not (interviewee # 7). In addition to the 14 students who attended a class through television or the V.K. platform, ten students failed to make academic progress during the outbreak. Interviewee # 8 shared their observation that their child "made no effort to apply the lesson." Aside from that, he had no interest in gaining knowledge. I was the one who forced him to go to school every day. He did not learn the material by watching it on the Noor platform or via V.K.

Virtual kindergarten Maintenance

The descriptive statistics revealed that 53.0 % of participants complained that no support was available from the teachers whenever assistance was acquired. "Every parent who participated in the study reported no teacher provided their child assisted education programs and didn't even call them. Parent # 11 commented, "Support education wasn't available. This has never been offered. Lessons weren't called. No instructions were given." Several participants claimed this may be related to earlier conflicts with their children's instructors, as interviewees # 7 and 12 remarked, "Maybe it's because we had a disagreement in the beginning" and "I didn't receive any help from any of the teachers." One participant reported we couldn't meet with teachers despite calling the class teacher. The English teacher rarely called. We're helpless. During the quarantine, just one student received online special education support from a private institution in addition to school support. Most participants claimed they didn't use private special education institutions (Table 1).

Table 1
Descriptive frequencies of access to Virtual Kindergarten (n=17)

Sub-themes		F	(%)
Use of Virtual Kindergarten	Watching recording lessons	12	70.6
	Attending V.K. with participation	6	35.0
	Attending V.K. without participating	8	47
	Sharing homework on the V.K. platform	7	41.1
	Not participate	10	58.9
V.K Maintenance	There is no school coordinator and V.K.	9	53
	Obtaining remote support education from a private education institution	13	76.5
	No training before registering at V.K.	17	100

Master Theme 2: Obstacles during the utilization of V.K.

The mind map sorted out obstacles into two sub-themes i.e., barriers to access V.K. and social and health concerns. Concerning barriers to accessing V.K., the most prominent barriers were reported as lack of teacher-student-parent communication, no access to computers and the Internet, difficulty in controlling kids while using V.K., lack of parents' knowledge on advance technology and resistance to non-attendance at V.K. There were some social and health issues highlighted by the participants. These concerns were mainly no social activity with peers, alteration in sleeping habits, children were boredom after continuous use of V.K., low motivation to attend V.K., and attention deficit (Figure 2). The detailed descriptive statistics have been briefed hereafter.

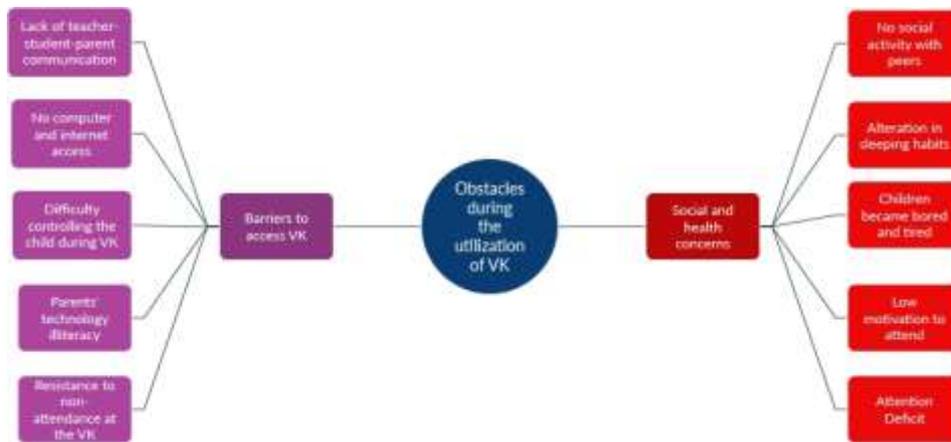


Figure 2
Mind map showing obstacle to utilization of V.K.

Barriers to accessing V.K.

The analysis of the interviews conducted for this research unveiled a spectrum of issues integral to the virtual education experiences of children with disabilities during the pandemic. Among the prominent challenges identified were a pervasive lack of computer and internet access, posing a substantial barrier to remote learning participation. Moreover, concerns emerged regarding the inefficacy of the distant learning system, with participants citing difficulties in adapting to online platforms and expressing dissatisfaction with the overall learning experience. Another noteworthy finding was the struggle to establish effective cooperation among teachers, students, and parents, pointing to communication gaps and a lack of collaborative strategies. Parent-11 noted, "There was no coordination among students, parents, and teachers." 24.0 % of parents expressed concerns that the distance education process was not carried out in collaboration with teachers. However, a significant 18.0% of parents reported that their children encountered difficulties with distance learning due to a lack of access to computers or the internet. Parent-7, for instance, stated, "Despite his father's occupation

at a factory, the absence of internet at home posed a notable challenge. While his father, had access to the internet through his phone, he couldn't leave the device at home due to work demands". 47.0 % of individuals remarked that their kids were resistant to and unable to adjust to remote learning (Table 2). According to Parent 9, " At home, they were a bit lazy and didn't go to school. Staying at home made them feel less motivated, and they didn't engage in school activities." A parent (Parent-14) said that because of the prolonged outbreak, the kids behaved irresponsibly and never paid attention in class. They used to do many activities together at the beginning. However, as time went on, the children started feeling less anxious and became more relaxed. Parent 6 mentioned that her child saw the quarantine as a kind of vacation. However, all the parents, including Parent 15, emphasized that the way distance education was happening wasn't working well. "The efficiency of the situation was quite lacking." Parent-6 asserts this procedure proved ineffective, particularly for kids with exceptional needs.

Social and health concerns

According to the views of all participating parents, the main issue in this procedure was that their kids felt highly bored and overwhelmed during the outbreak. The children were bored during distance learning, according to Parent 5: "The child was quite bored. I was unable to control him. There were instances when she insisted on going for a walk outside. However, due to the location of my home right on the street, she couldn't fulfill this desire. Parent 7 said that being under an outbreak was similar to being trapped within one's house. We found ourselves captive within the confines of our home. Three parents shared worries about their kids facing difficulties during the outbreak, mainly because they couldn't be with their school friends, and this lack of interaction led to problems like boredom and sadness.

Due to the absence of a social atmosphere, they were bored and missed their peers and school atmosphere. They often remarked, "I wish we could be at school. When will it open?" Parent # 7 said, "I feel bad about my kid because he picked his pals, established friends with them, and began strolling with them, and that's when the endemic broke out." On the other hand, a different parent (Parent # 9) said that her kid was not bored and that they instead went to their rural houses and passed the time by browsing the Internet on their smartphones and tablets. "We arrived at the community. The kids could also explore the village's gardens and vineyards without any problems. Visiting friends in the village was easy, and even if they had phones and tablets, they didn't cause any issues." Besides expressing boredom at home, two parents mentioned changes in their family's daily sleep routines during the quarantine. Parent #4 noted that both adults and children struggled with falling asleep. Parent # 5 expressed the same: "We didn't have a fixed time to go to sleep or wake up."

Also, as mentioned by Parent #5, there was an additional problem during this time – conflicts between siblings. According to her, they frequently fought, making it quite challenging. On a different note, Parent #6 expressed that her child gained a lot of weight while in quarantine. The child was already overweight, and the lack of activity during the quarantine led to further weight gain.

Table 2

Descriptive statistics of the obstacles during the utilization of V.K. (n=17)

Sub-themes	Frequency (f)	Percentage (%)
Barriers to accessing VK		
Lack of teacher-student-parent communication	4	24
No computer and internet access	3	18
Difficulty controlling the child during V.K.	8	47
Parents' technology illiteracy	15	88
Resistance to non-attendance at the V.K.	6	35
Social and health concerns		
No social activity with peers	3	18
Alteration in sleeping habits	2	11
After a long period of sitting, children became bored and tired.	1	6
Low motivation to attend	1	6
Attention Deficit	15	88

Master theme 3: Strategies for increasing access to the V.K. parent perspective

Families' perspective regarding their children's education during the outbreak and how to increase access to the use of V.K. has been well illustrated by a mind map (Figure 3). The mind map revealed that interviewees suggested some key points to increase the useability of V.K. For instance, it was noticed that teachers' support and interest in children's education seem to be critical strategies followed by assistance with the V.K. platform Training teachers and parents on the terms of Virtual Kindergarten and online technical support. The details on descriptive statistics have been explained hereafter.



Figure 3

Mind map showing strategies to enhance use of V.K.

In Table 3, the data reveals that a significant majority, specifically 76.0% of parents, expressed the expectation that teachers would display interest in and provide support for their children's education. Participant comments further elaborate on this anticipation, with statements such as "I expected teachers to help" and " Things would be better if teachers were part of it," as provided by Parent #2. Similar to how the two parents, in

particular, said they anticipated at least a phone call from teachers. Parent 1 said it would be preferable if the teacher contacted and inquired why the student wasn't attending class. Online courses were given to typical youngsters (interviewee # 6). Our kids need more attention. Schools can send essential messages via Whatsapp. Kids don't get much attention, even during the day. "I expect more online classes for kids, say once a week," remarked interviewee # 12. If they weren't kept away from school like this, things would be different. One parent said: "I wish my kid were taken care of. I want teachers to develop a strong school-family partnership not just during this time but also when things are normal. It would be preferable if he enjoyed himself and learned something. Mothers, being the primary caregivers, often possess an intimate understanding of their children. I wish moms could tell teachers about our kids. They should ask us how our kids are doing and what they need. Teachers get mad at me when I try to say something, and I shout, "Stop telling me how to do my work." (Parent #7).

In discussing teachers' expectations, one parent highlighted their frequent communication with the teacher but expressed having no particular expectations. Parent # 17 said, " We talked a lot with our teachers, but I didn't expect much because of that. Parent # 8 stated, "I didn't expect anything from anyone. If my child had asked for help, I would have done my best to support him. However, since he doesn't have an interest in learning, I don't have specific expectations from him."

A notable 24.0% of parents expressed the suggestion that private educational institutions should be considered for their children during the current period. Parent # 6 expressed: "I wish the school would talk to us online at least once a week. Even if there's no lesson, they could check in and ask about our situation. They did it once before, asking about how my child was doing with home activities. They even requested a video of my kid doing a workout at home for a showcase. It would mean a lot if the school could stay connected and show interest in our well-being, even if it's not for a lesson every time."

Parent # 7 stated: "Because of my financial situation, I couldn't give my child the chances they should have. I wish for something, whether it's a tablet or a computer, for my child."

Table 3

Descriptive statistics of Strategies for increasing access to the V.K. parent perspective (n=17)

Families' strategies to accessibility to V.K.	Frequency (f)	Percentage (%)
Teachers' support and interest in children's education	13	76
No expectation	2	12
Support education from the private education institution	4	24
charitable donations of technological devices to their children	1	6
assistance with the V.K. platform Training teachers and parents on the terms of Virtual Kindergarten	17	100
VK ease of use for teachers, parents, and children	12	71
Active coordinator during V.K. lessons for emergent issue	7	41
Online Technical support	15	88

DISCUSSION

This research examines parents' perspectives on how special education is provided to students with disabilities within inclusive education during the COVID-19 epidemic. The study discovered that during the pandemic, the MoE supplied the Noor platform and V.K. classes that the kids with disabilities partly viewed. On the other side, it was discovered that some teachers had planned online classes during the COVID-19 outbreak. Teachers were known to post worksheets for the whole of general education courses on social media groups simultaneously. Also, they shared worksheets on the V.K. platform, but parents found it easier to pick up worksheets on social media groups. However, parents were unable to do so and abandoned their young charges. It was found that teachers did not give students feedback on the assigned worksheets. The literature emphasizes that effective distance education requires teachers to regularly reach out to families after each lesson. This communication is essential to check if students have completed their homework and to offer comments and feedback on the work done during class (Al-Samarrai et al., 2020). The literature also emphasizes the importance of diversifying distance education materials and content, considering the individual characteristics of students. This underscores the need for varied educational resources tailored to the specific traits and needs of students engaged in remote learning (Averett, 2021; Tadesse & Muluye, 2020).

The results revealed that during the pandemic, school administrators and teachers did not offer essential educational support services crucial for the success of students with special needs. Likewise, it was observed that only a small percentage of children with special needs received support and assistance, or none at all, throughout the COVID-19 pandemic (UNISCO, 2021). A private educational institution chosen by parents provides special education services for children with special needs outside regular school hours (<https://www.moe.gov.sa/en/Pages/default.aspx>). However, the investigation revealed that only one student received distance-based special education support from this private institution, while the rest did not receive any support at all. Similarly, the study indicates that many children with special needs have been unable to access special education and related support services throughout the COVID-19 pandemic (Metel Yesil et al., 2022; UNISCO, 2021).

The analyses revealed several issues during the pandemic's quarantine, including inadequate computer and Internet access, challenges in communication between teachers, students, and parents, and a lack of cooperation in distance education for students with special needs. Claims were made that teachers and relevant personnel failed to reach out to families with special needs pupils. As a result, many families and children suffered adverse effects on their physical, emotional, and mental well-being. Lacking professional assistance or institutional support, families were compelled to undertake home education independently. Throughout this process, families and children expressed a pervasive sense of being overlooked and forgotten (Bennett, 2019; UNISCO, 2021). The absence of communication between students and instructors negatively affects learning, leading to a significant learning gap over an extended period (World Bank, 2020). The primary concern lies in the inadequacy of educational approaches for children with special needs, further exacerbated by additional issues

identified in the research. Regrettably, similar findings regarding the challenges in teaching children with special needs emerged consistently throughout the pandemic. (Bennett, 2019; Mete Yesil et al., 2022; UNISCO, 2021). Reports and studies reveal that numerous children struggle to complete distance education programs due to insufficient access to computers and the Internet, a predicament often attributed to global financial constraints (Basilaia & Kvavadze, 2020; Moensted, 2022).

Psychosocial health issues emerged during isolation, evident in research findings. Students with special needs and their families experienced considerable unhappiness and boredom due to the confinement at home and limited social interactions. Moreover, strained relationships among siblings were identified, aligning with findings from other researchers. Multiple studies indicate that families and children faced overwhelming challenges during the period of restrictions. (Bennett, 2019; Mete Yesil et al., 2022; Su et al., 2021). Literature suggests offering psychological therapy services to support the mental well-being of students and families during a pandemic (Alsamiri et al., 2022; Chiu et al., 2016). The MoE Training and Guidance Services Information Line in KSA offers phone-based support to students and parents seeking assistance in preserving their psychological well-being during the pandemic. Instructors play a crucial role in informing parents about available opportunities and offering guidance. Furthermore, children need diverse social experiences for holistic growth, acknowledging that families serve as their primary source of interaction (Brazendale et al., 2017).

Practically all participants expected instructors to be attentive and supportive of their children's education during the pandemic (Toseeb et al., 2020) emphasizes, in alignment with this study, the necessity for expert guidance and support to address children's educational and psychological needs within families. The research acknowledges that many families had ongoing work commitments during the pandemic, potentially limiting their ability to encourage their children in their studies and adhere to distance learning protocols. Conversely, households lacking working members are thought to provide a conducive environment for motivating children in their studies. However, it is acknowledged that parents, having the opportunity to witness their children's learning progress, may not be sufficient for students to effectively continue their education and comprehend the material; instructors' assistance is deemed essential. (Alsamiri et al., 2022; UNISCO, 2021).

The research indicates that a small proportion of students with special needs engaged in online courses during the COVID-19 epidemic, with the majority relying on television for classes. Communication among professors occurred through WhatsApp groups, but the study revealed shortcomings in instructors' support and guidance for children with special needs and their families, including the adaptation of lessons. Feedback from families emphasized a lack of consideration for the educational needs of children with special needs within inclusive education. The literature consistently expresses that inclusive education should tailor approaches to each student's demographics, strengths, and weaknesses, ensuring their specific needs are addressed (Imaniah & Fitria, 2018; Mitchell, 2014). The research findings reveal that children with special needs did not receive an equitable or competent education during the pandemic, and they were not included in any integration efforts.

CONCLUSION

The study suggests providing extra online classes for kids with special needs and their families, including special education services. In Saudi Arabia, the Ministry of Education offers summer teaching jobs, but it might not be very helpful if families are away or in rural areas. Limited access to computers and the internet, along with a lack of interest in studying during the outbreak, can make extra education challenging. To support the mental health and education of kids with special needs, counseling services should be available regularly without families having to ask for them.

This study implies that it's really important for schools, teachers, families, and students to work closely together, especially in inclusive education. When it comes to learning from home, teachers keeping an eye on things becomes even more important, especially for kids with specific needs. Changing worksheets for these kids, as part of personalized learning plans, can be helpful. To overcome challenges, it's suggested that the teams creating these plans make a practical program that involves teachers and families for both in-person and online learning. Talking to teachers about what they think of online learning for kids with special needs could also be helpful. Support from teachers is crucial for the education of kids with special needs, and families hope that groups helping others might provide things like computers and the internet for their children.

Virtual kindergarten applications can be a great way for students with disabilities to learn and engage in early childhood education. However, there are some instructional implications that should be considered when using these applications. One barrier to accessibility is that some applications are not designed with all users in mind. Families' perspectives should also be considered when exploring the use of virtual kindergarten applications. More efforts should be put on to explore the reasons why some parents do not want their children with disabilities to use this kind of application. Perhaps, more in-depth interviews with the parents of the children who have used or not used virtual kindergarten application can be carried out to obtain first-hand information.

RECOMMENDATIONS

1. When designing virtual applications for use in the classroom, accessibility should be a key consideration.
2. There are some barriers that can prevent students with disabilities from using virtual apps. These barriers should be identified and addressed.
3. Families' perspectives on virtual applications can play a role in whether or not students with disabilities use them. Families should be involved in the decision-making process.
4. When using virtual applications in the classroom, it is important to provide support and instruction to students with disabilities.
5. Teachers should monitor students' use of virtual applications to ensure that they are using them in a way that is beneficial to their learning.

6. Virtual applications can be a valuable tool for supporting students with disabilities in the classroom. However, they should be used in a way that is appropriate for each individual student.

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