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# DIGITAL LEARNING FOR AUTISM SPECTRUM DISORDER (ASD) STUDENTS: THE DIFFICULTIES PARENTS ENCOUNTER

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**Abstract**

This study aims to explore the problems parents face when introducing digital learning into the education of their children with autism spectrum disorder (ASD). The research niche addresses the intersection of digital learning platforms and the unique needs of ASD students, while specifically focussing on the issues reported by parents who are trying to take an active part in their children's studies. A total of 112 parents participated in this study, providing their opinions through a Google Form questionnaire. Data were analysed using SPSS 29 to identify key issues like accessing technology, understanding and using digital tools, supporting children's engagement and motivation, time management, and balancing other responsibilities. The key takeaways of the study reveal that parents face significant challenges while selecting appropriate tools, ensuring compatibility with their child's needs, and managing the appropriate screen time. In conclusion, these difficulties demand an ongoing effort throughout the design, training, and assistance provided for parents to incorporate digital learning into their children's education successfully. The key to this success seems to be for teachers, developers, and families to work together to maximise the chance for digital learning to become a breakthrough success for ASD students.

**Keywords:** Autism spectrum disorder, digital learning, parents, difficulties, parental challenges.

## INTRODUCTION

Recent advances in technology have brought up significant changes to the educational process, including increased efficiency and student-specific adaptability. The use of tools and technology within adaptable digital learning environments provides a multitude of advantages for students who have autism spectrum disorder (ASD). The use of these technologies gives students the opportunity to have educational experiences that are flexible and individualised. It is also important to note that many ASD students often have difficulties in conventional classroom settings due to their social skills trouble, communication issues, and problems with sensitivity to certain stimulations. Digital platforms can improve issues related to learning by offering flexible courses in the form of videos. They also use graphic displays and interactive exercises instead of textbooks, which can overwhelm students. For example, ASD students are mostly visual learners and prefer to learn in environments that are coordinated with the provision of a timetable. Video modelling, picture cues or graphic organisers, and communication apps offer students clear and regular teaching and learning processes. Furthermore, digital platforms include intrinsic flexibility as a result of their adaptive nature, allowing students to choose their own learning pace. Consequently, students are liberated from the stress that arises from trying to keep up with other students. Therefore, the integration of digital learning has the potential to provide academic success for ASD students while meeting the students' needs for individual accommodations for learning.

Accordingly, while there may be certain benefits to using digital learning tools in the education of ASD students, implementing such technologies presents challenges for parents. Considering that parents are the primary carers for their children's education, it is their job to encourage and facilitate their children's participation in digital education at home. However, many parents with ASD children experience many challenges ranging from acquiring the right technologies to learning how to use these technologies. These challenges are worsened by the fact that ASD students need individualised

learning and need constant monitoring during the digital learning sessions. The one major issue is poor access to support and information given to parents on how to effectively apply technology that is developed for ASD students. Further, most parents often find themselves overwhelmed with the challenge of catering for their child's digital learning needs while at the same time managing other responsibilities like working and undertaking other chores. This ends up leaving a big gap on how ASD students can effectively capture the essence of the digital learning environment, as parental participation is crucial in such cases.

The main research question is to determine and understand the key difficulties that parents encounter when assisting their ASD children with digital learning. Specifically, the study will assess the effectiveness of current digital learning tools, explore parents' experiences and struggles in utilising these tools, and identify any gaps in resources or support that hinder successful implementation. Based on the study's objectives, the following key research questions are formulated:

1. What are the most common challenges parents face when supporting their ASD children in digital learning?
2. How effective are current digital learning tools in meeting the educational needs of ASD students?
3. What resources and support do parents need to better facilitate digital learning for their ASD children?

While the primary emphasis of this research is on parents, it also acknowledges the significance of teachers, schools, and even policymakers. The significance of this research for teachers is in its aim to comprehend the challenges encountered by parents, therefore enabling the development of a tailored and more efficient digital learning program for ASD students. From the perspective of the school, this research may assist in enhancing efforts to implement measures that support parents in addressing the difficulties associated with digital learning for ASD students. Policymakers may use the findings to guide the creation of policies and allocate resources that enhance the well-being of ASD students and their families. This will ensure that digital learning is accessible and efficient for everyone.

## Literature Review

### Overview of Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that involves the individual with ASD having difficulties in social communication, limited or restricted interest, and repetition in behaviour (American Psychiatric Association, 2013). Therefore, the diverse nature of ASD affects individuals from the aspect of talents and their behavior. According to Schwartz, Beamish, and McKay (2021), individuals with ASD often face challenges in social interaction such as problems in interpreting non-verbal signals, giving a rational response to a discussion and establishing relationships with peers. In the educational environment, social barriers may exist in the range of communication disorders that cause situations where ASD students are shunned by other friends and some are even bullied (Mamas, Daly, Cohen, & Jones, 2021). However, communication impairments can vary from non-verbal communication to proficient language abilities, but the use may be atypical (Sturrock et al., 202). ASD students often do repetitive actions and focus on something they are interested in, which makes this routine difficult for them to adapt to the social environment (Hirota & King, 2023). In addition, many ASD students sometimes have sensory sensitivities with the five senses—touch, hearing, taste, smell, and sight (Singh & Seo, 2022), and these sensitivities may affect their ability to concentrate (Balasco, Provenzano, & Bozzi, 2020). This also affects the academic achievement, social assimilation, and emotional state of ASD students. Rationally, to help the development of these ASD students, an educational approach that suits the uniqueness of an ASD student accompanied by the concept of teacher delivery and the use of clear and systematic visual tools is important (Jones, Hanley, & Riby, 2020). Skilled and experienced teachers play the main role in creating a conducive educational environment that can help optimise learning for ASD students. Nevertheless, the positive development of ASD students will not happen if only one teacher plays a

role. Parents and other professionals, such as therapists, are also advised to cooperate more strongly with their children's teachers to create a learning atmosphere that can help the development of ASD students.

**Digital Learning in Special Education**

The technology that has been used in the world education system has had a very positive impact on the development of special education needs. This is also not an exception for ASD students who also go through the digital education process, which gives them multiple benefits. Barua et al., (2022) conducted a study on the use of digital learning for ASD students and affirmed that educational applications, games, and interactive software are effective in meeting the educational needs of ASD students. In addition, research by Almurashi et al. (2022) has shown that the use of technology in the learning process of ASD students has a positive effect on improving communication skills, fostering social relationships, and improving cognitive abilities in ASD students. This can be proven by another study by Ruta-Sominka and Budzińska (2022) on how the use of communication software and visual tables found in tablets can help communication for non-verbal ASD students. The variety of digital devices and digital platforms allows parents to choose the best devices for their children and even be sensitive in choosing the appropriate digital platform for their children. The combination between the suitability of digital devices and digital platforms will definitely influence the interest of ASD students, which in turn can further improve the development process of these students. The development of technology in education is growing rapidly as virtual reality (VR) and augmented reality (AR) are increasingly used. The use of these two technologies in the ASD learning process helps as a simulator for an activity. For example, ASD students who have communication problems can practice conversations, greetings, and other social interactions and can improve their communication skills over time (Khoirunnisa et al., 2024). A study by Vairamani (2024) also shows that the use of VR and AR technology that simulates real life scenarios can help the learning process of special education students, including ASD students. In addition, digital platforms that have many different functions or activities and are user-friendly also help further in the digital learning process for ASD students. Font and text size customisation features in Microsoft Word or Google Sheets allow ASD students to modify text size, style, and spacing to suit their reading preferences. The facility to change the font size can help ASD students who have visual sensitivities or difficulties focussing on small text to change to an appropriate size to reduce eye strain and enhance focus. Therefore, prioritising convenience in digital devices and digital platforms is important to ensure the learning process of ASD students achieves its goals and there is a significant increase in learning outcomes (Roberts-Yates & Silvera-Tawil, 2019).

**Parental Involvement in ASD Education**

There are several dimensions of parental involvement that contribute to educational success. Epstein's (2018) framework identifies six types of involvement, including parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. For ASD students, specific types of involvement are particularly significant. For example, communication between parents and teachers is crucial for sharing insights about the child's needs and progress. Studies by Aykut and Kahveci (2024) underline that consistent and open communication channels help in tailoring educational approaches that address the unique challenges faced by ASD students. Many previous researchers have conducted studies on how parental involvement in the context of digital learning becomes an important element in the educational development of ASD students (Dumaru, Hackler, Flood, & Al-Ameen, 2024; Skinner, Abbott, Taggart, & Hou, 2023; Rice & Ortis, 2021). Smith, Burdette, Cheatham, and Harvey (2016) have stated that in the digital learning process, parents play an important role as the main supporters in helping the education of their children with ASD.

According to Brito and Dias (2020), to meet their children’s needs, parental involvement is crucial in picking and choosing the materials on the digital learning platforms they are using. Moreover, to ensure that the learning platform used by ASD students is impactful, parents need to experience and

learn about the benefits and limitations of the platforms themselves. In addition, a study from Burrell a Borrego (2012) emphasises that active participation from parents in the intervention process can enhance the effectiveness of their children's education, leading to better communication and social skills as a result. Meanwhile, Hammer, Scheiter, & Stürmer, (2021) stated that tech-savvy parents may have a significant impact on their children's academic progress if they are taking part in their children's education. However, many parents are still overwhelmed and confused by the complexity of special education services and the lack of clear guidance on how to support their child effectively (Fitriani, Muslihat, & Tabroni, 2023). Undoubtedly, digital learning settings present various difficulties, including those related to the lasting engagement of the children and their vulnerability to sensory overload, which is disproportionally challenging for ASD students. Parents thus have an essential role in adapting the learning environment (Heyworth et al., 2021) and offering emotional support to their children, which is the key to overcoming the difficulties of the use of digital learning platforms (Yang, Wong, & Poon, 2024). This is further reinforced by research conducted by Chaidi and Drigas (2020), which shows that parental presence in their education significantly improves the performance and social skill development of ASD students.

## METHOD

### Research Design

This study collected quantitative data directly from parents of ASD students. This approach allows the parents to provide measurable information on their experiences with digital learning tools and highlight which challenges their children are facing most. The research is making efforts towards identifying the most pressing concerns and trends by statistically analysing replies, offering a clear and objective perspective for future direction in the development of ASD student education.

### Data Collection

This study uses a quantitative approach in which questionnaires are distributed to collect data. A descriptive design was used to identify the difficulties faced by parents with autistic children in the issue of using digital learning in the learning process. A total of 112 parents throughout Malaysia were randomly selected as a study sample. Questionnaires in the form of Google Forms were distributed through social media such as WhatsApp and Facebook. Items in the form of a Likert scale are used to identify the sample's level of agreement with the statements provided. A total of 20 items related to the challenges faced by parents in the learning process of autistic children by using digital learning have been prepared. Respondents have answered the statements provided based on Multiple Choices for demographic information and the Likert scale, which is 1 = strongly disagree, 2 = disagree, 3 = natural, 4 = agree, and 5 = strongly agree for the difficulties faced. Data collected was analysed using SPSS version 29.

## RESULTS

### 4.1. Demographic Information

**Table 1.** Parents demographic background.

| Parents Demography Background (N=112) | Frequency (N) | Percentage (%) |
|---|---|---|
| **Gender** | | |
| Male | 38 | 34% |
| Female | 74 | 66% |
| **Age** | | |
| Below 30 years old | 49 | 44% |
| 31-40 years old | 35 | 31% |
| 41-50 years old | 18 | 16% |
| 51-60 years old | 3 | 3% |
| Above 60 years old | 7 | 6% |

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**Table 1 (Continued).** Parents demographic background.

| Parents Demography Background (N=112) | Frequency (N) | Percentage (%) |
|---|---|---|
| **Education Level** | | |
| High School | 63 | 56% |
| Diploma | 12 | 11% |
| Bachelor's Degree | 7 | 6% |
| Master's Degree | 4 | 4% |
| Doctoral Degree (Ph.D., Ed.D., etc.) | 26 | 23% |
| **Location of Residency** | | |
| Urban | 36 | 32% |
| Rural | 76 | 68% |
| **Job Sector** | | |
| Public Sector | 62 | 55% |
| Private Sector | 50 | 45% |
| **Number of Child(ren)** | | |
| 1 | 5 | 4% |
| 2 | 10 | 9% |
| 3 | 28 | 25% |
| 4 | 20 | 18% |
| 5 | 23 | 20% |
| 6 | 15 | 13% |
| 7 | 4 | 4% |
| 8 | 3 | 3% |
| 9 | 2 | 2% |
| 10 and more | 2 | 2% |
| **Type of child(ren) school** | | |
| Government School | 72 | 64% |
| Private School | 32 | 29% |
| Other | 8 | 7% |

### 4.2 Difficulties Faced by Parents

Table 2 shows a study analysis of the difficulties faced by parents against the four main challenges, namely access to technology; understanding and using digital tools; supporting children's engagement and motivation; and time management and balancing other responsibilities.

**Table 2.** Difficulties encountered by parents.

| No. | Difficulties | Mean |
|---|---|---|
| Access to technology | | |
| 1 | I have reliable access to the necessary devices for my child's digital learning. | 4.68 |
| 2 | I have Internet connectivity at home that is sufficient to support my child's digital learning needs. | 4.46 |
| 3 | I am able to manage the cost of maintaining technology (e.g., devices, software) within my budget. | 4.43 |
| 4 | I am able to easily access and set up digital learning platforms required for my child's education. | 4.23 |
| 5 | I am able to find and access software that is suitable for my child's specific learning needs. | 3.88 |

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**Table 2 (Continued).** Difficulties encountered by parents.

| No. | Difficulties | Mean |
|---|---|---|
| Understanding and using digital tools | | |
| 1 | I find it challenging to understand how to use the digital tools designed for my child's education. | 4.30 |
| 2 | I find it challenging to get sufficient technical support to help me understand and use the digital learning tools effectively. | 4.86 |
| 3 | The digital learning tools I use are user-friendly and easy to navigate. | 3.94 |
| 4 | I have limited access to adequate training and resources to help me learn how to use the digital tools for my child's education. | 4.88 |
| 5 | The digital tools I use are effective in supporting my child's learning needs and goals. | 4.40 |
| Supporting children's engagement and motivation | | |
| 1 | I find it challenging to keep my child engaged with digital learning tools. | 4.56 |
| 2 | It is difficult for me to identify digital learning resources that effectively motivate my child. | 4.79 |
| 3 | I often struggle to balance screen time with other activities to maintain my child's interest in digital learning. | 4.46 |
| 4 | My child's unique needs make it hard for me to find digital learning tools that are both engaging and suitable. | 4.62 |
| 5 | I face difficulties in understanding how to use digital learning tools to enhance my child's motivation effectively. | 4.52 |
| Time management and balancing other responsibilities | | |
| 1 | I find it challenging to allocate sufficient time for implementing digital learning activities for my autistic child due to other daily responsibilities. | 4.81 |
| 2 | Balancing my child's digital learning sessions with other family responsibilities is often stressful. | 4.78 |
| 3 | The time required to set up and manage digital learning tools for my autistic child interferes with my ability to complete other important tasks. | 4.50 |
| 4 | I often feel overwhelmed by the amount of time needed to integrate digital learning into my child's daily routine alongside my other commitments. | 4.66 |
| 5 | It's hard for me to keep track of my child's digital learning routine because I have to balance work and housework. | 4.87 |

When examining the results for these four challenges, each difficulty will be properly described to provide a more comprehensive comprehension. First, as for difficulties regarding access to technology, a mean score of 4.68 indicates that most parents have reliable access to crucial equipment for their child's online education. Studies show that consistent access to technology enhances students' engagement and performance in school, especially in a blended or fully online learning environment (Chiu, 2021). Meanwhile, from the aspect of internet facilities at home, a mean 4.46 was collected, which indicates that, on average, respondents perceive their internet connection as more than sufficient for educational purposes. Stable internet connections are essential for accessing educational resources, participating in virtual classrooms, and engaging with interactive learning platforms (Cambini, Sabatino, & Zaccagni, 2024). The affordable technology budget implies that technology maintenance is financially feasible. A mean score of 4.43 suggests excellent agreement, indicating

parents can afford technology upkeep. Technology maintenance is becoming cheaper due to cost-effective solutions and competitive market dynamics. Open-source software and economical maintenance services help people and organisations control technology expenditures (Blind et al., 2021). Meanwhile, accessing and setting up digital learning has a mean of 4.23. Clearly, many parents find the process easy. The high ranking shows that parents are comfortable and competent with these digital tools. Parents who smoothly incorporate these technologies into their child's learning routine improve engagement and academic success (Wilke, Tricia van Rhijn, Squires, & Barton, 2024). However, parents struggle to find software that meets their child's learning demands and this can be seen from the mean record of 3.88. Parental overload from the variety of instructional software contributes to this issue and which software best meets individual learning needs might be difficult to determine (Briti & Dias, 2020).

The second difficulty is about the understanding of parents in the use of digital tools for their children. Parental comprehension of digital technologies for children is the next issue. Its mean of 4.30 implies that many parents find digital tools difficult to use, suggesting a gap between educational technology design and non-expert user friendliness. The complexity and variety of these technologies may overwhelm parents without technology or educational backgrounds (Auxier, Anderson, Perrin, & Turner, 2020). Meanwhile, a mean score of 4.86 on a scale measuring technical support for digital learning tools implies that help may be lacking. This score represents parents' dissatisfaction with technical support. Digital learning tools' integration and utilisation depend on good technical assistance. Alshammarı (2020) emphasises the need for technical support in enhancing digital learning environments by removing barriers to tool adoption and reducing disruptions during use. In order to effectively educate, it is essential that digital learning tools be designed to be easily usable and easy to navigate. However, the average score for user-friendly platforms is 3.94, indicating that although parents see these tools as accessible, there is still potential for improvement Kiourexidou, Kanavos, Klouvidaki, & Antonopoulos (2024) found that digital learning environment design greatly affects user experience and learning results. Easy-to-use tools boost user pleasure and engagement. Similarly, the question about the availability of sufficient training and resources to assist the child in using digital technologies scored a mean 4.88. This shows that although some parents may feel fairly supported in learning how to utilise digital technologies for their child's education, most parents may believe the training and resources supplied are insufficient. This may be due to imprecise instructions, inadequate tutorials, or resources that fail to provide the digital skills they need (Alshaboul et al., 2024). Furthermore, a significant average score of 4.40 shows that the average parent is confident that digital learning used is effective in supporting the development of their autistic children. This coincides with a study by Wahyuanto, Heriyanto, and Hastuti, (2024), who found that the correct use of technology can result in significant improvements in academic performance.

The third focus of difficulties is from the aspect of encouraging children's involvement and motivation, where for parents, keeping children interested with digital learning tools is a typical problem for parents in digital education. The mean of 4.10 shows that parents on average agree that they face the challenge of ensuring their children are engaged with the digital learning tools used in the learning process. This mean result also proves that ensuring children are engaged with digital learning tools is not an easy task for parents. This has also been proven from previous studies, which stated that there are several reasons why students are not so engaged with digital learning. Simelane-Mnisi (2023) asserted that the reason students do not show significant involvement in the use of digital learning is that there is little or no engaging material or interactive components in a digital learning platform. This is also agreed upon by Maryono and Lengkanawati (2022), stating that digital learning should have another layer of complexity that can meet different learning styles, especially for ASD students. Next, for the question about the challenge to identify digital learning resources that are effective in motivating their children, the answers from these parents have given a large mean amount of 4.79. This shows that identifying digital learning options that motivate children may be difficult for parents. For ASD students, they focus more on getting rewards, which in turn can motivate them to

continue studying. However, not all digital learning platforms have these features. There is no doubt that there are many platforms that provide the concept of giving rewards, but they have to be paid and often do not fulfil the learning for all ASD students. Studies have also shown that the concept of giving immediate feedback and giving rewards found in the digital learning platform helps in motivating ASD students (Wang & Xing, 2022). Besides, difficulties in encouraging children's involvement and motivation can also be seen from the aspect of balancing screen time with other activities to maintain their child's interest in digital learning, where a mean of 4.46 has been obtained. This shows that parents are faced with the challenge of dividing time between the use of digital technology and also activities that do not involve the use of technology for ASD students. It is important for parents to ensure that their children allocate a balanced amount of time between digital and offline activities to avoid screen addiction. The importance of this can be seen from a study conducted by Charan, Kalia, Khurana, and Narang (2024), which shows that the overall development of ASD children occurs through the process of physical play, social connection, and screen time. Similarly, challenges are also faced by parents in finding digital learning tools that are engaging and suitable for the uniqueness of their autistic children. The mean record of 4.62 shows that parents face this challenge because many digital technologies fail to meet ASD students' personalised materials, which could engage and prevent frustration (Aidonopoulou-Read, (2020). The last challenge under the aspect of encouraging children's involvement and motivation can also be seen when parents also state that they face issues related to understanding in using digital learning to motivate their children. The mean obtained is as much as 4.52, which shows that many parents involved in this study feel that they have less understanding of how to use digital learning. Understanding how to use digital learning definitely affects the motivation of students, especially ASD students. Understanding how to use digital learning tools is crucial for parents because these tools can significantly enhance their child's education, communication, and social development (Alharbi, Ibrahem, & Moussa, 2023).

The fourth and also the last difficulties that have been asked in the questionnaire involve difficulties from the aspect of time management and handling other responsibilities among parents. The first question under these difficulties is related to the challenge of allocating sufficient time between autistic children's digital learning and also towards other daily responsibilities. The results of the questionnaire show that a high mean score has been obtained, which is 4.81. This shows that parents are faced with the challenge of balancing time to teach their autistic children using digital learning and also time in managing other responsibilities such as helping other children in learning and providing sufficient needs for the comfort of all family members. According to Russell and McCloskey (2016), parents who are in a situation of balancing time for their autistic child's digital learning process and managing other responsibilities will cause them to neglect their own self-care. This will lead to stress, decreased mental health, and physical exhaustion. This can be seen with a mean of 4.78 was obtained when parents were asked questions about balancing digital learning sessions with other family responsibilities that put pressure on them. This pressure occurs when parents have to monitor their children's internet activities, repair technological damage, and ensure interesting educational materials that lead to the occurrence of techno-stress and burnout among parents (Bravo-Adasme, Cataldo, & Toledo, 2023). Apart from the aspect of balancing time to help autistic children's digital learning process and other responsibilities, parents also think that the time required to prepare and manage digital learning tools for autistic children also interferes with their ability to complete other important tasks. With a mean score of 4.50, reflecting a high level of agreement, this issue is evidently prevalent and concerning. According to Laurie et al. (2019), parents often feel pressured in handling and efforts to ensure that the digital learning devices used are suitable for the specific needs of their children. This definitely has a big impact on the lives of the parents, especially from the aspect of the amount of time allocated to focus on other family responsibilities and work commitments. This coincides with this study when parents also stated that they experience time constraints to integrate digital learning into their child's daily routine alongside their other commitments, which has made them feel overwhelmed. A mean of 4.66 indicates a high level of agreement with the statement, which suggests that parents generally feel that they are struggling to balance their various responsibilities. This is

often related to the increasing demands of digital learning for children, which can require substantial time and effort from parents. Studies have shown that parents often struggle to find a balance, as the demands of guiding their child's digital education can compete with work, household tasks, and other commitments (Livingstone & Byrne, 2018). Finally, the statement that maintaining a child's digital learning schedule is tough owing to job and home time constraints had a mean response of 4.87. According to a study by Knopik, Błaszczak, Maksymiuk, and Oszwa (2021), parents spent about three hours and 23 minutes a day on average supporting the remote education of their children. The shift to digital learning has exacerbated pressures, particularly for working parents who now face the dual challenge of ensuring their children stay on track academically while maintaining their professional responsibilities.

## DISCUSSION, CONCLUSION, and SUGGESTIONS

The research focusses on an important question of what difficulties parents encounter when implementing digital tools in their ASD children's learning process. Studies have shown that parents face challenges in terms of technology accessibility, insufficient training, and lack of appropriate digital learning content for their children. Nevertheless, the study offers detailed perspectives that surpass previous research. Although prior studies highlight mostly general challenges, this study meanwhile highlights particular challenges that parents with ASD report, including challenges in technology, tool understanding and application, children's engagement and motivation, and time management alongside other tasks. There is a need for increasing awareness and offering assistance to parents in order to help them manage existing technologies more effectively and define the gaps in using technologies in their ASD children. Aligning with this study's findings, Buteau-Poulin et al. (2020) highlight that parents of ASD students often face difficulties with the usability of digital tools. Furthermore, the problem of insufficient or inadequate training for parents is also raised. This study also echoed a concern from research by Fernández-Batanero, Montenegro-Rueda, Fernández-Cerero, and García-Martínez (2022), which stated that insufficient professional development limits the effective use of digital resources. The other major difficulty is the focus on the psychological effect on the parents. This aspect resonates with the study Lee, Terol, Yoon, and Meadan (2024), who posit that parental support is essential but receives little attention.

Concisely, while the article's findings align with established research, it introduces new perspectives on parents with ASD-specific challenges. This broad approach stresses the need to develop special digital learning solutions for autistic children and, at the same time, supplying the families of these children with the proper care they need. Thus, some prescriptions can be derived from these findings for teachers, parents, and policymakers. Thus, teachers should ensure that ASD students have proper integration of digital tools in their learning needs as individuals. According to Alqudah and Khasawneh (2024), technology and learning accommodation in different sensory and learning ability-based environments would help in the improvement of learning engagement. While these tools can be helpful, training in how to use them is necessary for teachers to be able to effectively provide support to students. Therefore, government policymakers should ensure funding for the development of the digital teaching and learning resources for the effective use of the technology. Policies should also encourage technology effectiveness research and best practices exchange. Abusini et al. (2023) indicated that technology usage in educating children with disabilities should be standardised to make the process smoother and more uniform across schools. Policy should also subsidise program efficacy via digital tools and provide outlets for sharing success stories. Parents are engaged in learning and need technology knowledge and training (Soyoof et al., 2024). Clear communication between parents and instructors may help solve problems and adjust strategy.

This study has provided valuable information not only to parents but also provides an opportunity for teachers, schools, and the government to provide priority. The limitation of this study involves the focus of geography, where many parents in this study live in rural areas. This also affects the findings of the study because in some rural areas, reliable getting technological devices or managing these

tools may be scarce or difficult. The significant difference in location between parents who live in the city and outside the city also affects the use of digital learning tools by parents with ASD children. This is also stated by Schofield (2000) that variations in access to technology and educational resources can affect the generalisability of the findings. Besides, when responding to the questions given, parents' perception of digital learning may be influenced by personal experience or expectations. For example, the difference in the area where the parents live definitely affects the answers given by the parents based on their experience and expectations. This is a study limitation, as there will definitely be bias in every parent's experience and expectation. Stantcheva (2023) stated that the bias in providing information could lead to the distortion of data and limit the reliability of the study.

Based on the findings and several study limitations that have been stated, future studies are recommended to examine the effectiveness of parental training and support programs that specifically focus on digital learning for ASD students. Many parents may struggle with understanding how to use digital learning tools effectively, leading to frustration and suboptimal educational outcomes for their children. Studies might examine which training methods are best for parents, such as in-person seminars, online courses, or hybrid programs. Research could additionally investigate how peer networks or coaching may assist parents. overcome difficulties and remain motivated to embrace digital learning at home. Cross-cultural comparisons to determine how cultural and socioeconomic variables affect parents' digital learning challenges for ASD kids are another promising study path. Research might examine if parents in various nations confront similar or different issues and how cultural views towards technology and education affect them. Further study should examine how socioeconomic characteristics like money, education, and technology availability impact parents' digital learning. Policymakers and educators may focus solutions for underprivileged parents by recognising these discrepancies. Digital learning's long-term effects on ASD kids require longitudinal study, not short-term studies. Future research might evaluate how long-term usage of digital learning tools impacts academic achievement, social skills, and well-being. This study might also examine how parental participation maintains beneficial results. Longitudinal research would reveal which digital learning practices work best for ASD children. Future studies might include examining parents' urban or rural residences. This discrepancy also influences research conclusions.

**Ethics and Conflict of Interest**

The authors declare that the study has not unethical issues and that research and publication ethics have been considered carefully.

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