Distance Learning for Children with Autism Spectrum Disorders

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ABSTRAK

Salah satu dampak pandemi covid 19 adalah sekolah ditutup, dan siswa diminta untuk belajar di rumah. Kondisi ini mempengaruhi siswa dengan gangguan spektrum autis. Pembelajaran jarak jauh (PJJ) menjadikan siswa dengan gangguan spektrum autis tidak nyaman, sering tantrum, dan menjadi lebih frustrasi. Kondisi ini menjadi alasan peneliti untuk meneliti pelaksanaan PJJ pada anak dengan gangguan spektrum autis. Penelitian ini memiliki tujuan untuk menganalisis PJJ pada anak dengan gangguan spektrum autis. Penelitian ini menggunakan pendekatan kualitatif. Pengumpulan data dilakukan dengan menggunakan metode wawancara dan angket. Subjek penelitian ini adalah guru anak berkebutuhan khusus bagi anak dengan gangguan spektrum autis (GSA) di sekolah. Analisis menggunakan analisis kualitatif. Hasil penelitian menunjukkan proses pembelajaran online PJJ lebih besar menggunakan aplikasi whatsapp. Hal itu dikarenakan keterbatasan pada fasilitas untuk pembelajaran online, keterbatasan pengetahuan dan keterampilan orang tua untuk menggunakan fasilitas proses PJJ, dan beberapa guru yang kurang terampil dalam melaksanakan proses PJJ. Pelatihan-pelatihan atau seminar online diperlukan sebagai pendekatan pada orang tua untuk memberi pemahaman dan meningkatkan keterampilan guru dalam PJJ. Hasil penelitian ini diharapkan dapat memudahkan orang tua dan guru dalam PJJ, khususnya bagi anak dengan gangguan autis.

ABSTRACT

One of the impacts of the covid 19 pandemic is that schools are closed, and students are asked to study at home. This condition affects students with autistic spectrum disorders. Distance learning (PJJ) makes students with autistic spectrum disorders uncomfortable, often tantrums, and become more frustrated. This condition is why researchers examine the implementation of distance learning for children with autistic spectrum disorders. This study aims to analyze PJJ in children with autistic spectrum disorders. This research used a qualitative approach. Data collection was carried out using interview and questionnaire methods. The subjects of this study were teachers of children with special needs for children with autistic spectrum disorders (ASD) in schools. The analysis used qualitative analysis. The results showed that the PJJ online learning process mostly used WhatsApp. It is due to limitations on facilities for online learning, limited knowledge and skills of parents to use PJJ process facilities, and some teachers who need to be more skilled in carrying out the PJJ process. Online training or seminars are needed as an approach to parents to provide the understanding and improve teacher skills in PJJ. The results of this study are expected to facilitate parents and teachers in PJJ, especially for children with autistic disorders

1. INTRODUCTION

Covid-19 spread worldwide starting in December 2019 (Maryanti et al., 2020; Wulandari & Agustika, 2020). Covid-19 affects various aspects of human life. This influence impacts health, social, welfare, economy, and education (Chang et al., 2020; Kim, 2020). Education impacts learning, especially for children with autism spectrum disorder (ASD). Children with autism spectrum disorder (ASD) have significant difficulties in social interaction, communication, and behavior (Riza et al., 2018). ASD children also have barriers to adapting to new situations, feel pressured by new conditions they are familiar with, lack the spontaneity of children in general, tend to be rigid, and cannot accept change (Itskovich et al., 2021; Moody & Laugeson, 2020). Autism spectrum disorder is a pervasive developmental disorder characterized

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by problems with social communication, interest, coordination, attention, and health (Fajrin & Leonardi, 2019; Hourcade et al., 2012). People with autism have the characteristics of being very sensitive and unable to make small changes in their surroundings (Kusumandari, 2018; Stenhoff et al., 2020). They need help with how to react according to the situation, it is difficult to accept change, and they are included in learning changes, especially conventional learning. In conventional learning, there is direct interaction between the teacher and students (face-to-face) (Fahrudin et al., 2021). Covid-19 requires learning conditions to be carried out remotely. PBL differs from conventional learning because distance learning does not involve face-to-face and direct interaction (Bahasoan et al., 2020; Garad et al., 2021).

Distance learning is not familiar in the world of education in Indonesia. Still, it has been developing for a long time in line with the increasing awareness of lifelong learning (long-life education). (Susmiati, 2020; Yunita & Elihami, 2021). People increasingly understand the importance of lifelong learning. First is the change in society, which is getting faster, and the demand for speed to obtain information. These reasons make the concept of virtual learning important in distance learning, especially for students with special needs, which in this study was devoted to children with autism spectrum disorder (ASD). At this time, there is a lot of research on distance learning, including the obstacles to implementing distance learning during a pandemic in terms of learning media and during the COVID-19 pandemic in elementary schools (Mamluah & Maulidi, 2021). Analysis of student learning motivation using learning videos as an alternative to distance learning (Latip, 2020). Teacher challenges using distance learning methods (Furkan et al., 2021). The role of information and communication technology literacy in distance learning during the Covid-19 pandemic (Ammy & Wahyuni, 2020; Marwanto, 2021; Saifulloh & Darwis, 2020; Wijayanti & Fauziah, 2020). However, until now, no research has discussed distance learning in children with autism spectrum disorders.

This study aimed to analyze the implementation of distance learning in children with autism spectrum disorders. A qualitative approach is used in this research. The study's results explain the greater online learning process using the WhatsApp application. It is because some data shows limitations in facilities for online learning, limited knowledge and skills of parents to use online learning process facilities, and some teachers need to be more skilled in carrying out online learning processes. Online training or seminars are needed as an approach to parents to provide the understanding and improve teacher skills in online learning. The results of this study are expected to make it easier for parents and teachers to learn online, especially for children with autistic disorders. What's new in this study is the research subjects involved, children with autism spectrum disorder, the research site, and the research process carried out.

2. METHOD

This research is qualitative. The goal is to obtain qualitatively detailed and detailed data on the application of distance learning for children with autism spectrum disorders. Data collection was carried out using interviews and questionnaires. The subjects of this study were teachers of children with special needs for children with autism spectrum disorder (ASD) in schools, especially in special schools. This research was conducted in the city of Bandung. The instruments used in this study were interview guides and questionnaires. Questionnaire distribution is used to collect data from research question number one to question three. Interview instruments were used to dig deeper into data about the implementation of distance learning, obstacles in implementing distance learning, and what solutions the teacher designed to overcome these obstacles. All the data is analyzed to create learning programs for children with ASD. Data analysis is a strategy of understanding data, processing meaningless data to become meaningful, and describing research results in line with the research problems formulated. Data analysis in this study includes data analysis for a qualitative approach, which consists of data reduction activities, data presentation, and conclusions that are carried out simultaneously. This research consists of three stages of research. The first stage is the data collection regarding the implementation, obstacles, and solutions of distance learning in the field. The second stage is the field result data analysis stage. At the same time the third stage is the stage of making a learning program. The research procedure is presented in Figure 1.
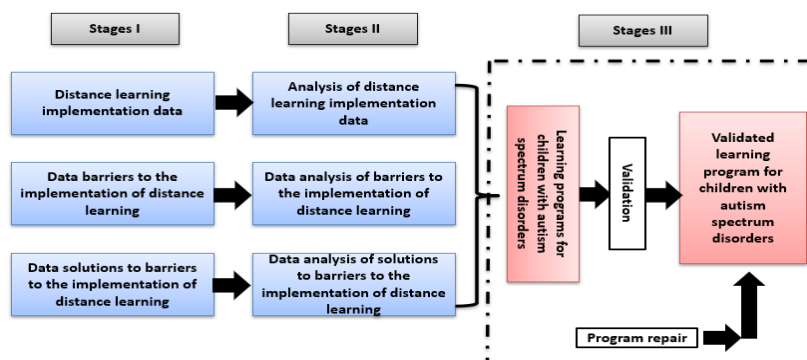
Figure 1. Research Procedure

3. RESULT AND DISCUSSION

Result

The goal is to obtain qualitatively detailed and detailed data on the application of distance learning for children with an autism spectrum disorder. The first finding is the means and delivery of distance learning materials. Use of facilities and delivery of distance learning materials. The study results show that the implementation of distance learning programs in special schools shows that teachers and students mostly use personal cell phones. As many as 40% of teachers and 60% of students use personal cell phones. 24% of teachers and 16% of students use personal computers, the rest use school computers, and 60% of parents use gadgets owned by parents. Mobile phones are needed for distance learning (Suliani & Ahmad, 2021; Wijayanti & Fauziah, 2020). The learning system uses WhatsApp more in delivering material. Most people find it easier to use WhatsApp (Khasanah & Sari, 2021). As many as 32% only used video, 28% used video and PowerPoint slides, 12% delivered material verbally, 12% used video calls, 12% combined verbal, and 4% used video shows and power points. Video media can make it easier for students to understand learning material. In the process of delivering material, the context of the material delivered varies. As much as 68% of the material is delivered according to the conditions of each student, 12% of the material is adapted to the demands of the curriculum, and 8% of the material is modified from the curriculum associated with Covid-19. It is also important to modify the curriculum according to the needs of students. The results of using the facilities and delivering distance learning materials are presented in Figure 2.
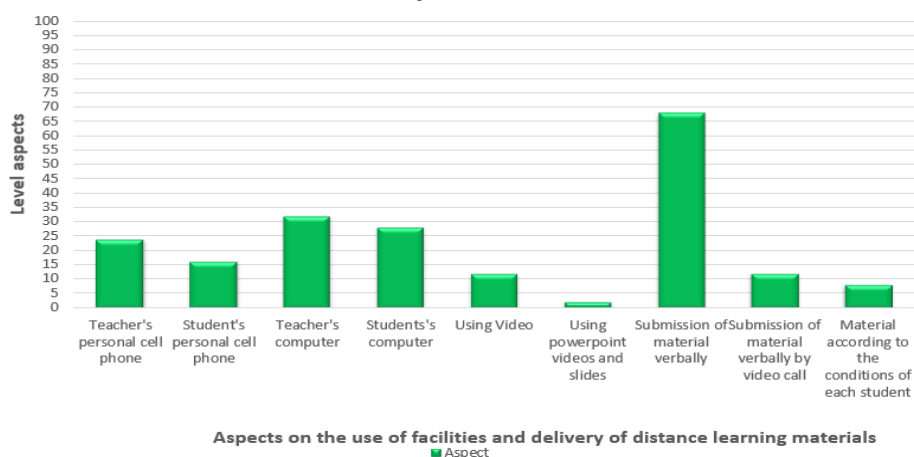

Figure 2. Use of Facilities and Delivery of Distance Learning Materials

The condition of educators' knowledge about distance learning is important to know (Muhaemin & Mubarok, 2020; Simanjuntak et al., 2020). There are several conditions of educator knowledge about distance learning, there are those who have enough knowledge about direct distance learning at the same time between educators and students (56%), and there are those who have much knowledge about direct distance learning at the same time between educators and students (32%). Some need to gain knowledge about distance learning directly at the same time between educators and students (12%). Teachers are also quite skilled in implementing distance learning (72%), and 28% are skilled in implementing distance

learning. The students were able to take part in distance learning (52%), and 28% of students were less able to take part in distance learning, 8% of children were able to take part in learning, and 18% of children could not take part in learning at all. Most students are skilled at distance learning. Adaptation is needed so students can follow the distance learning process. The condition of educators' knowledge about distance learning is presented in Figure 3.
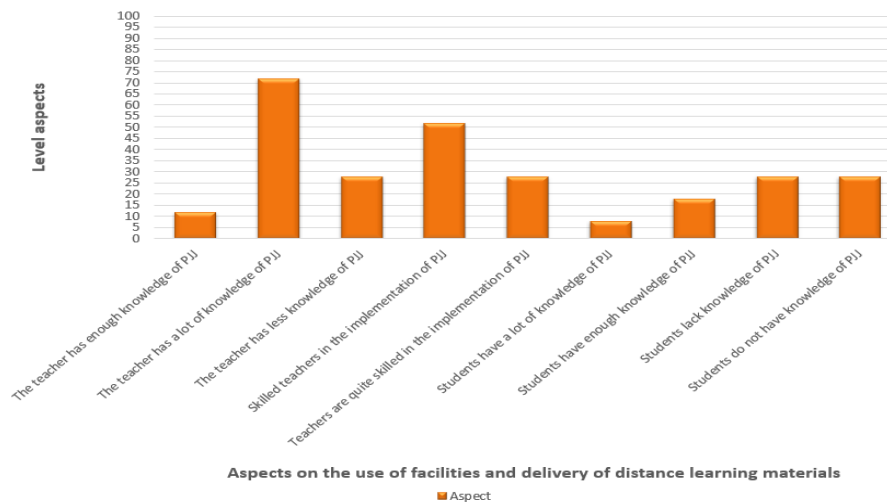

Figure 3. Teacher Knowledge and Skills in Distance Learning

Knowledge of Tasks and Materials in Distance Learning is needed in the learning process. In this study, they learned by sending assignments via the WhatsApp application (60%), and 20% collected assignments using the school module. In non-face-to-face conditions, online delivery of learning materials using learning videos (32%), providing modules as a source of the material (16%), taking photos of material and sending it to students via Whatsapp (12%), and sending learning guides (4%). Some vary between learning videos, photo materials, school modules, and learning guides, as much as 4%. Knowledge of Tasks and Materials in Distance Learning is presented in Figure 4.
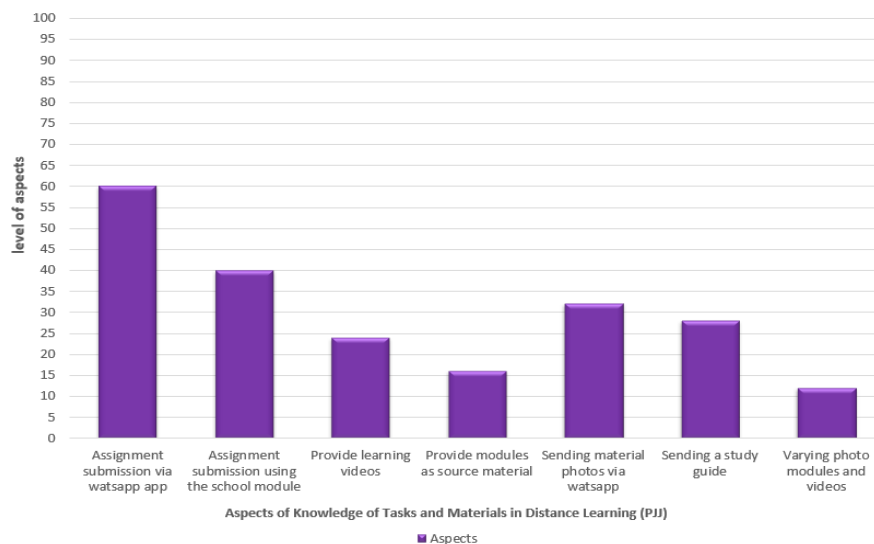

Figure 4. Knowledge of Tasks and Materials in Distance Learning

The second finding is the obstacles to implementing distance learning. Distance learning is one of the adjustments in education during the Covid-19 pandemic. Distance learning is inseparable from the various obstacles encountered in the implementation process. Several factors cause obstacles in synchronous e-learning-based distance learning, namely students' unpreparedness (48%), parents' unpreparedness (20%), infrastructure that does not yet support synchronous distance learning (36%),

material content that is difficult to deliver synchronously (28%), and the availability of media that does not support (20%). The unpreparedness of students can be caused because they have yet to be able to adapt to the distance learning process. Factors causing obstacles to implementing synchronous e-learning-based distance learning are presented in Figure 5.
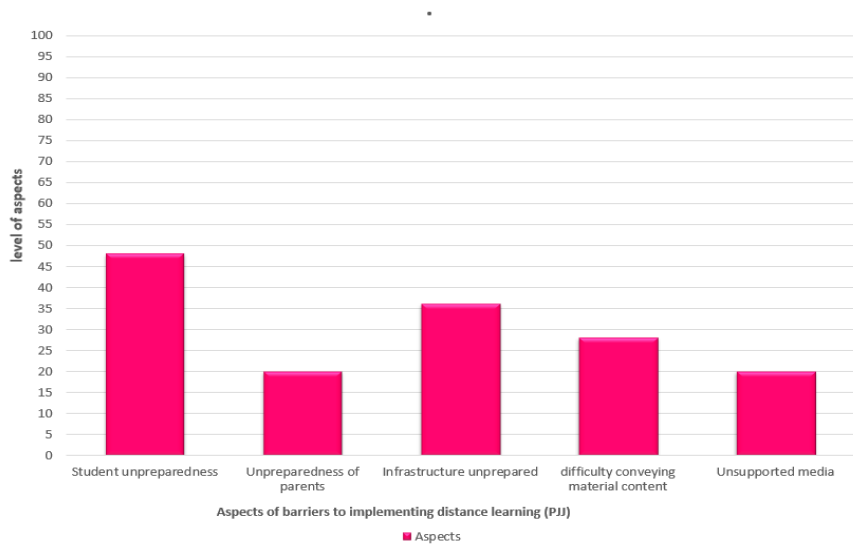

Figure 5. Causes of Obstacles to the Implementation of Distance Learning

In practice, efforts are needed to overcome obstacles to implementing distance learning. Several solutions were made to overcome the obstacles that occurred. 45.8% held training, 29.2% conducted webinars, 8.3% conducted workshops, 37.5% schools provided application facilities to support distance learning, 25% provided internet quota assistance, and 20.8% improved facilities schools. Most of them choose training to overcome barriers to distance learning. The training is effective in overcoming the problems of distance learning. Efforts to overcome obstacles to implementing distance learning are presented in Figure 6.
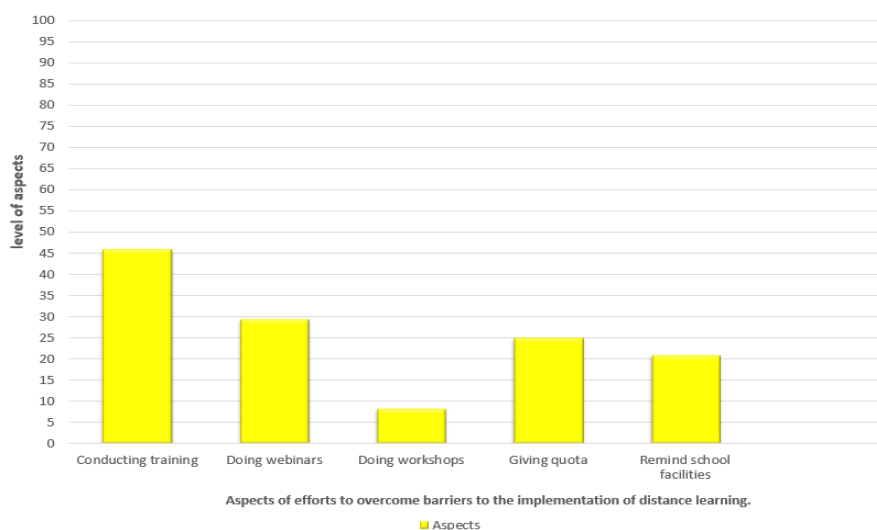

Figure 6. Efforts to Overcome Obstacles to Implementing Distance Learning

Discussion

Data analysis shows that the implementation of distance learning is quite good, although it has yet to show teachers' use of cell phones as learning media in distance learning. However, for children with autism spectrum disorders, cell phones assist in distance learning. Educational mobile applications can help autistic children develop communication and language skills (Hussain et al., 2021; Peñarrubia-Lozano et al., 2021). Applications based on iOS devices (iPad, iPod) have an occurrence frequency of 44.44%. Some teachers and students use cell phones because every teacher has a cell phone, and many parents or students

use cell phones to carry out distance learning. Mobile phones have the advantage of being easily accessible to anyone. Cell phones are more accessible because everyone has one (Anggraeny et al., 2021; Kuntarto, 2017). They have a variety of useful gadgets that can be used to make therapy sessions more interesting and enjoyable, such as cameras, accelerometers, speakers, microphones, and more. This project aims to design and implement a mobile application-based interactive learning environment for teaching children with special needs. Children with autism spectrum disorders learn very quickly through games on their cell phones. Children with autism spectrum disorders quickly find application options and can use them properly (Alcaniz Raya et al., 2020; Itskovich et al., 2021). They pressed too fast on the device screen, and most of them managed to block one or more apps during the experiment.

It is important to adapt the curriculum in distance learning, especially in applying learning strategies and methods. In the process of adapting the curriculum, there is a need for a combination of e-learning and traditional teaching methodologies that can help introduce information and communication technology (ICT) into the classroom, not just focusing on student specificities (Peñarrubia-Lozano et al., 2021). Solving problems based on research results is by designing learning programs that apply blended learning models. The blended learning model is a distance learning program that applies offline and online learning (Latorre-Cosculluela et al., 2021; Yusnidar & Syahri, 2022). The learning style of children with autism spectrum disorders is visual, so using visual media is one of the media that can make learning easier for them. Children with autism spectrum disorders are visual learners (Alcaniz Raya et al., 2020; Finlay et al., 2022). Cell phones and applications on cell phones are a visual learning media for children with autism spectrum disorders. Therefore, applications designed by teachers can facilitate the interaction and communication of children with autism spectrum disorders. Evidence shows that children with autism spectrum disorder are more active and verbal while using mobile phone applications.

The results of the study show that the program used by teachers during distance learning still uses regular learning programs, and only in the delivery of learning the WhatsApp application is a means of liaison between teachers and parents. A blended learning program is a learning program that combines synchronous and asynchronous learning by maximizing the use of the Internet. Blended learning is effective for children with autism spectrum disorders in multiplication learning. Several things are important in the formulation of learning programs, the implementation of assessments, analysis of assessment results which will become the basis for program formulation, and the use of virtual reality (VR) media which has an important role in helping the learning of children with autism spectrum disorders (Horrace, H.S, Ip et al., 2016), and parental involvement in the learning process of the blended learning model also has an important role because, in the care of children's parents, there are changes, the anger level of children with autism spectrum disorders also decreases. Teachers must have a broad understanding of how to teach students (Andrini & Yusro, 2021; Yusnidar & Syahri, 2022). Teachers must know the parents' knowledge of learning from home, as well as the skills of parents to operate the media that will be used in the blended learning model. The teacher has several roles in the blended learning model, including ensuring readiness for parental involvement, providing adaptive learning programs by communicating with parents, designing learning materials, teaching materials accessible to students, and appropriate learning media for learning from home. Teachers must provide services for parents who have yet to be able to carry out learning from home. Teachers need to prepare materials to support distance learning for their students on the autistic spectrum (Stenhoff et al., 2020). In addition, teachers also need to formulate learning objectives.

The formulation of objectives in blended learning must describe student-centered learning activities or interactions between teachers and students. In the 21st century, several skills are formulated in 4C. 4C comprises communication, collaboration, creativity, and critical thinking (Dwijayanti, 2021; Jalinus et al., 2021). 4C shows the use of technology and information in the learning process. Examples of learning objectives are formulated through observing objects around the beach in the learning videos, and students can choose between sea objects and other objects carefully and critically. The learning objectives that have been formulated illustrate that learning is student-centered (students observing objects around the beach), using technology (learning videos), and critical thinking (choosing between sea objects and other objects carefully and critically). In addition to objectives, the formulation of learning materials must be considered.

The formulation of learning materials must pay attention to students' learning needs (the formulation of the material is obtained from the results of analysis of academic or developmental assessments). Compiled learning materials can be packaged online (available on the website, email, or other applications) or offline (printed materials). The teacher provides books adapted using picture media for students needing specific teaching materials. Media images in textbooks are not separate from the story but must be integrated (Bastian & Suharni, 2021; Umbara et al., 2020). Learning to match the same pictures to one another is one of the teaching materials for learning words. Teachers use pictures, augmentative and alternative communication devices, provide support in organizing daily activities (visual timetable, activity

boards, and techniques in behavior modification), especially for some students who are nonverbal or whose verbal skills have not yet developed, and require communication support in the delivery of learning material. Several techniques can be used in the learning process, such as token economy, behavioral contract techniques, and avoidance, which can be used as reinforcement when behavior changes occur. Other techniques in the behavioral approach that can be used in the learning process are modeling, chaining, and fading. If the learning material is difficult for children with autism spectrum disorders, then task analysis can be used. Task analysis involves breaking down large tasks into simple tasks children can do in stages.

The learning process and evaluation of learning outcomes can be designed using tables to make it easier for teachers to design each step depicted in the learning strategy. In teaching and learning activities, there are several stages of learning. The learning stages consist of preliminary, core, and closing activities. Learning evaluation is needed in the learning process. Evaluation of learning aims to know the achievement of learning objectives (Hayyuningtyas & Batubara, 2021; Nurhasnah & Sari, 2020). Evaluation of learning in learning activities is carried out with various aspects of assessment. From the data analysis results, there are three aspects of assessment regarding the interaction of students with learning materials, interactions between students, and interactions between students and teachers. In online activities, student interaction with learning materials is carried out in chatrooms, sharing links, and uploading material—likewise, interactions between students and between students and teachers. Meanwhile, face-to-face activities are carried out through question-and-answer activities and sharing ideas.

4. CONCLUSION

Distance learning is not easy to implement for children with autism spectrum disorder. Their main obstacles are social interaction and communication, and it is not easy to build joint attention in learning, but they are children with a visual learning type. Therefore, blended learning is the learning model choice for children with autism spectrum disorders. Refreshing teacher insight is important to increase teacher understanding and skills in teaching children with autism spectrum disorders, including teacher creativity in making virtual reality media. For future researchers, it is not only the implementation of distance learning that must be researched, but also the teachers' skills in designing, developing, and creating visual applications to help children with autism spectrum disorders learn.

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