COMMUNICATION IN ONLINE LEARNING FOR STUDENTS WITH AUTISM SPECTRUM DISORDERS (ASD): EDUCATIONAL CHALLENGES DURING THE COVID-19 PANDEMIC

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Abstract

Individuals with autism spectrum disorders (ASD) experience limitations in communication and socialization, including challenges in accessing higher education. These communication constraints further complicate the situation for ASD students amid the COVID-19 pandemic. This is exacerbated by the shift from traditional offline to online learning during the pandemic. Online learning, reliant on communication technology, proves to be challenging for individuals with ASD, given their existing communication difficulties. The challenges faced by students, educators (i.e., teachers or lecturers), educational institutions, and parents constitute crucial aspects that warrant thorough examination. The primary objective of this research is to analyze communication in online learning for ASD students during the COVID-19 pandemic. This research employed a qualitative approach with a narrative method. Data were collected through structured interviews with the research subjects consisting of education organizers, lecturers, and assistant lecturers at the London School Beyond Academy (LSBA)—a school for students with special needs headquartered in Jakarta, Indonesia. In-depth interviews and an extensive literature review were conducted to gather data. Subsequently, the collected data were qualitatively analyzed using NVivo 12 Plus. The research findings reveal the crucial role of communication among stakeholders in the socialization of information and communication technology, curriculum, and training for lecturers and parents. This communication plays a vital role in creating a conducive online learning environment for students with autism spectrum disorders (ASD). However, despite these efforts, both lecturers and students require more time to deliver and comprehend learning materials in the online setting.

Keywords: Autism Spectrum Disorders; Communication; Online Learning; Special Education.

I. INTRODUCTION

Research indicates that deficits in various cognitive functions may occur, but this does not apply to all individuals with ASD. Intellectual disabilities are prevalent among most individuals with autism, meaning that the learning process for this group of students should be tailored based on each student's cognitive abilities (Buchnat & Wojciechowska, 2020). Despite education in a single class exclusively comprised of students with ASD, the differences in each student's cognitive abilities require teachers to adapt accordingly. Many students with mild intellectual disabilities may misunderstand verbal instructions on how to complete tasks and may not know what information to look for. Therefore, well-formulated instructions, reading materials, or independent listening should be prepared effectively to be understood by the students (Buchnat & Wojciechowska, 2020).

The related behaviors exhibited by nonverbal individuals with autism involve communication within and about themselves (Beesley, 2016). Repetitive behaviors such as spinning, clapping, and flapping disrupt interactions with others. While these behaviors can be learned, the inability to communicate exacerbates the issue, reducing opportunities to acquire substitute behaviors at the appropriate times. Allowing behaviors like pointing, screaming, and biting to serve as forms of communication unintentionally hinders the psychosocial growth of students within the community.

There are four crucial elements when teaching nonverbal individuals with ASD to communicate effectively using alternative methods for verbal communication: they must be active communicators, they need experienced peers as communication partners, families should participate, and lecturers must effectively facilitate communication (Chung, 2020). This approach is essential for application so that nonverbal students can transfer and apply knowledge in unfamiliar locations and with individuals who typically do not communicate with them. Students with ASD also encounter challenges in planning activities, along with difficulties in actions related to problem-solving. Moreover, they struggle with mental flexibility, generating new ideas, and self-control. Another barrier is that students with autism spectrum disorders have a psychoeducational profile marked by uneven developmental patterns.

Distance or online education can support the development of individuals with special educational needs. Online learning has the advantage of reaching students who face difficulties attending traditional classes, perhaps due to distance, personal challenges, or even time constraints, as it is more flexible than conventional learning (Rahmawati & Sujono, 2021). Limitations on children with autism spectrum disorders (ASD) outline specific learning difficulties for the ASD student group. Online education for ASD students demands lecturers to prepare them specifically and find the right ways to implement it to accommodate the needs and abilities of the students.

The utilization of technology in online learning has advanced beyond solely text-based Computer-Mediated Communication (CMC). In online learning, the adoption of real-time video communication applications, such as ZOOM and TeamsMeetings, has seen significant growth. These applications are not just CMC tools; rather, they serve as electronic platforms where collaboration with others can occur. Moreover, many of these applications can be operated not only on computers but also on mobile phones and other electronic devices. Not surprisingly, there is currently an increased usage in online distance education and group learning settings (Kreijns *et al*., 2021). On the other hand, chat programs like WhatsApp enable semi-synchronous message exchange, incorporating not only text but also short clips, emoticons, and animations. This provides users with unlimited possibilities to manipulate how others perceive their social presence (Kreijns *et al*., 2021).

This research focuses on communication among education administrators, lecturers, students with autism spectrum disorders (ASD), and parents to support online learning through curriculum socialization and adaptation, online learning methods, and the use of supporting information and communication technology. The communication limitations of individuals

with ASD become a significant issue during the learning process. The success of students with ASD in learning greatly depends on the ability of relevant parties to communicate information about online learning while understanding the characteristics of ASD. Based on the outlined rationale, this research specifically aims to analyze the role of communication in online learning for students with ASD.

II. METHODS

This research was situated within the domain of qualitative research, particularly exploratory research, operating within a constructivist paradigm. The chosen research method involved a case study approach carried out at the London School Beyond Academy (LSBA)—a special education institution. The participants in the study comprised key informants and supporting informants. The key informants were the LSBA director, and then seven additional informants, who were practitioner experts and academic educators, were selected using a snowballing technique.

The data collection utilized various methods, including in-depth interviews, observations, and a literature review. Face-to-face in-depth interviews were conducted, recorded with a recorder, and later transcribed verbatim. Additionally, a focus group discussion (FGD) was organized with both key and supporting informants at the research site. Apart from that, observations were carried out through video recordings capturing students' activities at the LSBA. Furthermore, documentation involved archiving interview recordings, interview transcripts, and observation notes. After that, the collected data underwent analysis using an interactive model (Miles *et al*., 2014). For qualitative analysis, the researchers opted for NVivo 12 Plus software, encompassing initial coding (first cycle coding) and subsequent coding (second cycle coding) stages.

III. RESULTS AND DISCUSSION

The limitations faced by adolescents with autism spectrum disorders (ASD) in accessing higher education pose a distinct challenge for students, lecturers, education administrators, and parents. Communication in teaching ASD students is crucial, as evidenced by six key points identified in the communication behavior in the teaching-and-learning processes involving ASD students at the LSBA campus: (1) communication among education administrators, (2) communication between education administrators and lecturers, (3) communication between education administrators and parents, (4) communication between lecturers and students, (5) communication between parents and students, and (6) communication among parents. In this context, education administrators refer to the permanent staff at the LSBA, including the LSBA director, coordinators, assistant lecturers, and the campus IT team. We found that the six roles (key points) actively engage during online learning. Communication takes place before, during, and after the pandemic or online learning occurs. In this case, each communication actor functions as a teamwork unit collaborating to implement effective and efficient learning for students during the pandemic. The following will provide a more detailed explanation of each communication role.

Communication among Education Administrators in Online Learning Adaptation

The transition from offline to online learning demands adaptation not only from students and parents but also from lecturers. The communication conducted by lecturers for this adaptation process is mainly related to the use of technology in producing instructional videos. Lecturers, especially lecturers who are not yet familiar with video-making technology, may seek assistance from assistant lecturers to help create instructional videos. Standards are also established for lecturers to communicate or interact online with students.

The LSBA has taken the initiative to create guidelines that govern participant behavior during online learning sessions. These guidelines prescribe specific rules for camera usage, emphasize the necessity of maintaining a serious facial expression, and mandate an appropriate distance to prevent participants from being too close to the camera. Furthermore, the LSBA ensures that participants and lecturers consistently present themselves visually by turning on the camera during sessions, thereby enhancing direct interactions. Adjustments are also made to the delivery of learning materials by converting some content into video formats. Throughout this process, lecturers are involved in exploring features provided by online platforms, such as Google Meet, to maximize the learning experience. All of these steps are the result of new learning and exploration, aligning with the needs and challenges of new online learning. (RW)
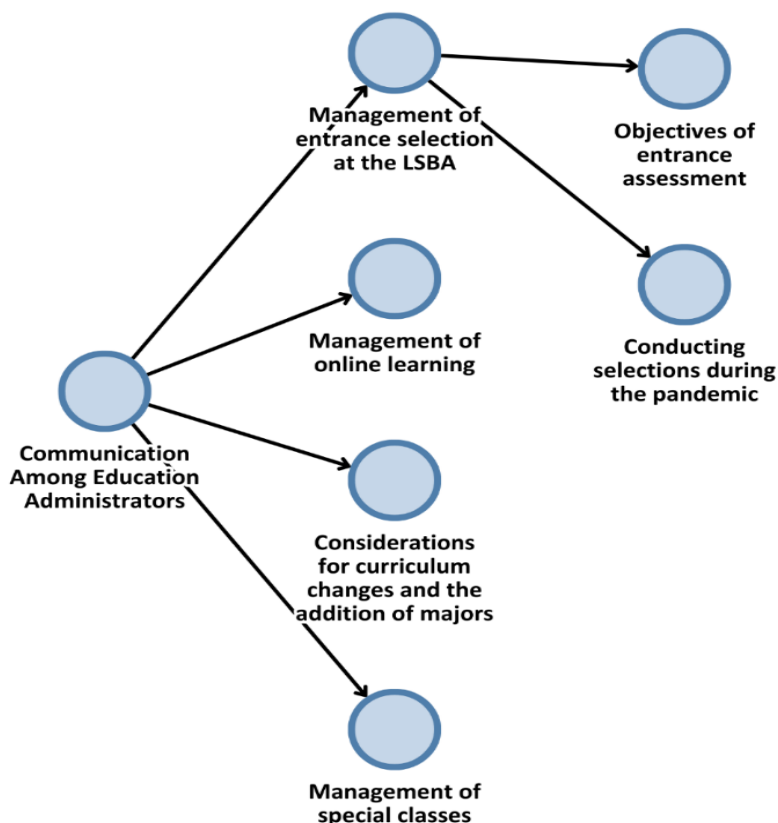

Figure 1: Roles of Communication among Education Administrators at the LSBA

In Figure 1, it is observed that education administrators tend to discuss the implementation of lectures, covering planning, execution, and evaluation of the educational activities conducted. The communication that takes place is focused on discussing the entrance selection procedures for prospective LSBA students. In this case, the campus will conduct an assessment to identify applicants aligning with the LSBA admission criteria. This evaluation encompasses cognitive, emotional, and social dimensions, ensuring the candidates are sufficiently proficient to actively participate in learning endeavors at the LSBA. Social and emotional aspects are the primary focus of this assessment, tailored to the capabilities of the human resources available at the LSBA in handling students with special needs. The admission criteria from these social and emotional aspects also aim to place students in the right class; for example, if their behavior is aggressive but they are intelligent, they are likely to be placed in a quieter class. The results of this assessment will serve as a benchmark for the student's subsequent learning process.

Meanwhile, when the pandemic phenomenon and mobility restrictions occurred, there was a complete shift in the technical implementation of entrance selection. This encompassed modifications to measurement tools, as well as changes in the conduct of interviews and observations during the assessment process. All processes were transitioned to an online format, leading to a decline in the quality of incoming students' post-assessment. The decrease in the quality of assessment results was attributed to the assessor's inability to directly observe the behavior of prospective students.

This limitation arose because observations were conducted through storytelling about the student's daily life and typical hobbies at home. Similarly, during the cognitive assessment through test instruments completed by prospective students, assessors had no control over the exam's implementation taking place at each participant's home. This was due to the technical aspects of the exam being conducted in real-time using ZOOM. While the LSBA had established procedures for conducting online exams in the assessment process, there was still a loophole where exams could be conducted dishonestly. This meant that the exam scores obtained were not purely reflective of the participants' abilities but rather influenced by the assistance of the participants' parents. This happened because, during the exam using ZOOM, participants were only required to work in a specific position captured by the laptop camera.

If the parents or companions of the participants were around them but not captured by the camera frame, the parents or companions could assist in answering the assessment exam questions. The results of this online assessment screening form the basis for the creation of a new department at the LSBA called the Special Skills Class. Although this class does not truly exist and is not marketed by the LSBA, it is created to accommodate students facing challenges in participating in LSBA's learning. Students enrolled in this Special Skills Class are those selected online during the pandemic.

During the ongoing period of online learning, the LSBA has been conducting evaluations of the learning process and student engagement. Based on the findings of these evaluations, a decision has been reached to revise the curriculum following learning achievements and to introduce new majors—one of which is the Special Skills Class.

Communication between Education Administrators and Lecturers

The method of communicating technological adaptation changes to lecturers involves informing them about managing online classes. This includes providing instructions on how to share a slideshow on ZOOM and ensuring the proper orientation during teaching is visible to both in-person and ZOOM attendees. Channels for disseminating this information to lecturers include WhatsApp groups, hotlines, and email. The information communicated may encompass changes in schedules.

Translated Excerpt:

> "*Typically, we convey the information through a specific WhatsApp group for lecturers. If not, we respond individually through the hotline. We often find that some lecturers miss out on information in the group, so we address it individually. We also use email, notifying them about changes in this week's schedule and the list of students attending, so the lecturers are well-prepared for the arriving students.*" (RW)

Concerning the rejection or protest from technologically challenged (tech-illiterate) lecturers, there has been no refusal to teach online. Those who are tech-illiterate simply request to be taught how to use technology more effectively. Another challenge faced is miscommunication among lecturers. Students have already come offline, but lecturers are absent, thinking that the learning is conducted online. This occurred during the transition period at the beginning of offline learning. Subsequently, lecturers were assisted by assistant lecturers to minimize miscommunication.
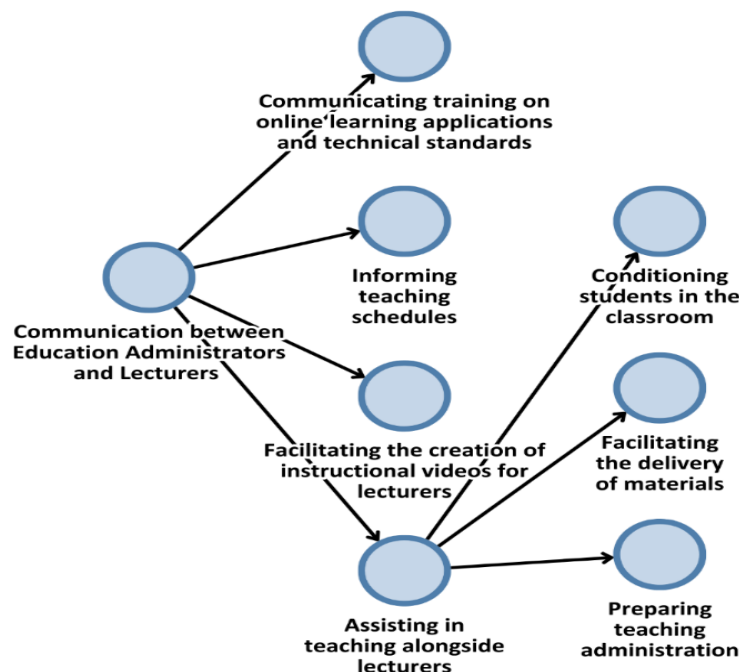

Figure 2: Roles of Communication between Education Administrators and Lecturers

In the adaptation process, the role of assistant lecturers is crucial in assisting lecturers with the use of technology, such as taking attendance, accompanying students, and even acting as a kind of "referee" for students who may exhibit tantrums, refuse to attend classes, and manipulate conditions to avoid participating. Assistant lecturers play a vital role in ensuring that students remain in their seats and actively participate in the lessons. Typically, lecturers delegate the task of student assistance to assistant lecturers. The role of assistant lecturers is highly significant, especially because they have an initial understanding of the characteristics of students with disabilities, with many of them having a background in special education. Additionally, assistant lecturers are expected to possess adequate technological competencies to support lecturers and ensure the smooth use of technology in teaching. Assistant lecturers also play a crucial role in administrative tasks, such as recording lecturer attendance and assisting with data entry, given that some lecturers may be less aware of the financial impact of their absence, even though it relates to their honorarium. Moreover, the role of assistant lecturers is considered dominant in this context as they also act as mediators or referees in the classroom, particularly in handling situations when students demonstrate non-compliance or lack of focus. In this regard, assistant lecturers can serve as mediators to ensure classroom order and help maintain control in challenging situations. (RW)

Communication between Education Administrators and Students' Parents

In facilitating learning support, there is communication from the educational institution (i.e., LSBA) to the parents. Examples of this communication include providing orientation to parents on the use of technology to assist their children's learning, such as accessing educational videos—explaining, for instance, how to open YouTube. There is also guidance on using Google Classroom to upload their children's learning assignments.
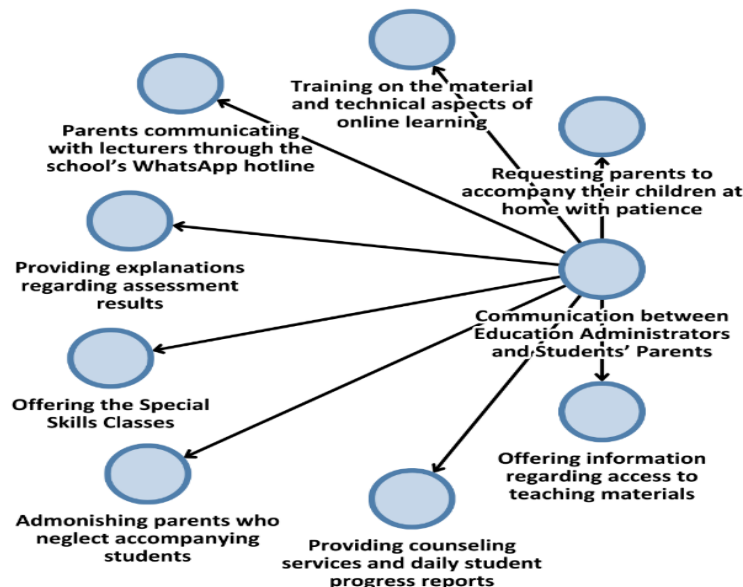

Figure 3: Roles of Communication between Education Administrators and Parents of Students with ASD

Parental guidance is crucial during online learning, considering that online learning relies on the use of technology. Parental guidance is necessary, at the very least for students with good academic performance, as they still require assistance in checking which materials need to be studied on a given day. Given that lecturers typically send a substantial amount of material for one semester with eight subjects, each subject having four or five assignments, even though they have labeled each session for each subject (if students still feel confused), they need assistance in checking daily to know what material will be studied the next day. Additionally, when students upload assignments to Google Classroom, help is needed to ensure that the upload has been done correctly, especially because initially, parents faced difficulties in checking assignments and understanding the potentially messy subject structures. As time progresses, parents' understanding of this system improves, but initial guidance is still necessary to ensure consistency in assignment and learning material management.

When parents are unable to follow the technology requested by the LSBA, lecturers must creatively address this by guiding parents in using technology through online assistance, not solely relying on written instructions. Lecturers need to be innovative when some parents encounter difficulties in adopting the implemented technology. Despite providing guidelines for parents, some still face challenges in implementation, prompting the lecturers to provide direct guidance. As an initial step in the learning process, lecturers must ensure that parents truly understand the use of technology, especially in task submission. Although learning begins or ends online, lecturers' focus is to ensure that parents can submit assignments using platforms such as Google Classroom.

Translated Excerpt:

> "*Not all parents find it easy to operate these platforms, so finding solutions to assist them is necessary. This approach involves intensive guidance, where lecturers directly mentor parents after their children complete online learning.*" (CR)

In addition to those challenges, there is also a constraint where parents are unable to accompany their children using technology during learning due to their busy work schedules. This results in their children never submitting assignments. Despite facing several challenges, parents have the enthusiasm to learn and continue to support their children's education. Even during face-to-face sessions, they still want to participate online to understand the lessons being taught for repetition at home. However, this is not allowed by the LSBA, as the learning concept does not involve parental assistance during face-to-face sessions.

Guidance from parents to their children during the pandemic, especially for those facing behavioral challenges, is quite crucial. Regarding behavioral challenges, some parents are open to the LSBA, while others are not. According to RW, parents have an understanding of their children's conditions, such as their tendency to make excuses or throw tantrums in certain situations. Some parents have opened up for honest communication about their children's conditions, while others may be more reserved. Communication challenges between parents and children also frequently occur, where some parents struggle to express their child's feelings or needs. This is often influenced by parental affection and concerns about the child's response

or reaction. Therefore, good support and communication from parents are essential factors in supporting a child's development. (RW)

Approximately 30% of parents with children who do not have behavioral issues feel that online learning is more suitable for their children. RW mentioned that there are parents who believe that online learning is the best option, especially for those who are education-conscious and have the role of a homemaker. They tend to be active in supporting and engaging in their children's learning process, making them more understanding of the conducted learning activities. If compared in terms of percentage, the majority who believe that online learning is the best option is around 30%. This tendency is more likely to occur with children who do not have behavioral problems, as they are generally more interested in online learning.

Communication between Lecturers and Students

Communication between lecturers and students becomes closer through interaction. Although students with disabilities have their respective ways of communicating with lecturers, it turns out they still need interaction to communicate. This is reflected in the following interview excerpt.

Translated Excerpt:

> "... *Actually, they are funny. Their need for interaction is quite high in their respective ways and individual characteristics. For them, although learning materials are presented asynchronously, enabling them to review, they are not overly enthusiastic about it. They are more excited when interacting online with the lecturers.*" (CR)

Interaction in the class makes students feel comfortable, allowing them to ask questions or simply observe conversations in the class if they cannot communicate verbally. Even though there are instructional videos, students still need interaction to remind them to open the instructional videos through synchronous classes. Here is an excerpt from the interview.

Translated Excerpt:

> "*Yes, that's right... so, let's watch it again, okay, watch it again... They prefer asking. Even without words, being there and observing the conversation seemed enjoyable for them. So, that's what they are looking for...*" (CR)

Regarding the students' desire to interact, it is evident from their enthusiasm when asking questions in class. During synchronous classes using ZOOM, they are very eager to ask questions, prompting lecturers to establish a rule that requires them to use the "*Raise Hand*" feature before asking. Lecturers even have to be designated as hosts to mute all participants if they compete to speak in the online class. Many questions arise, leading the lecturer to implement a rule that participants must use the "*Raise Hand*" feature if they want to ask a question, and all microphones must be turned off. This decision is made to avoid noise and communication barriers, considering that each device inevitably has a delay, ranging from a moment to a certain number of seconds, depending on the received signal. Thus, this rule is established to prevent overlapping voices, ensuring a smooth interaction.

Translated Excerpt:

> "*We have implemented a rule that, in the class, all participants must mute their microphones, and all lecturers and assistant lecturers are designated as hosts, giving them the ability to mute participants' microphones. If participants do not adhere to this rule properly, their voices will be muted collectively.*" (CR)

The enthusiasm of students in asking questions can also be seen as a form of self-actualization, which is a part of social presence. Even students who cannot communicate verbally also enjoy this social presence by observing conversations and responding with expressions such as smiling. Here is an excerpt from the interview indicating the situation.

Translated Excerpt:

> "*Instead, they possess a high level of social presence, both verbally and non-verbally. Even though they cannot speak, they can still observe, laugh, smile, and feel comfortable.*" (CR)

Interaction becomes more active during face-to-face offline learning sessions with lecturers compared to online learning through ZOOM. In contrast to online sessions, face-to-face interactions are more effective as there are fewer distractions for students. Lecturers also have their respective ways of intensifying interactions during online learning through ZOOM by calling them one by one, providing each student with the opportunity to showcase their work. This takes more time for lecturers to interact with each student. Here is an excerpt from the interview showcasing the situation.

Translated Excerpt:

> "*Generally, when I observe that, lecturers will still check one by one, so achieving competence indeed takes more time. It is because indirectly we have to, like in a physical classroom where we can ask, and all students respond. Although it's not a problem, here (using ZOOM) it's not possible because we can mute the student's microphone, but we still make sure they are called one by one. This means we need more time to ensure whether they understand or not. It will take more time, including when doing assignments.*" (CR)

In response to the transition from offline to online learning and the current return to offline learning after the pandemic, lecturers have focused on calming students who were initially very excited about reuniting with their lecturers and peers. According to CR, this strategy may not be considered a special approach but rather a response to the joy that arises when returning to face-to-face learning. This excitement is felt by all parties, both parents and children. This moment is not a deliberately planned strategy but rather an effort to reacquaint children with direct interaction after a year at home without meeting anyone. Those who spent a year without direct social contact appear very enthusiastic when they can finally meet, even making it challenging to maintain focus. Some children even express their joy by jumping around, with statements like "*I'm so happy, I'm jumping around because I'm happy.*" Addressing this situation takes time and needs a calm approach to pacify them. It is important to note that this

dynamic—although not necessarily difficult to manage—presents its respective challenges during face-to-face interactions.
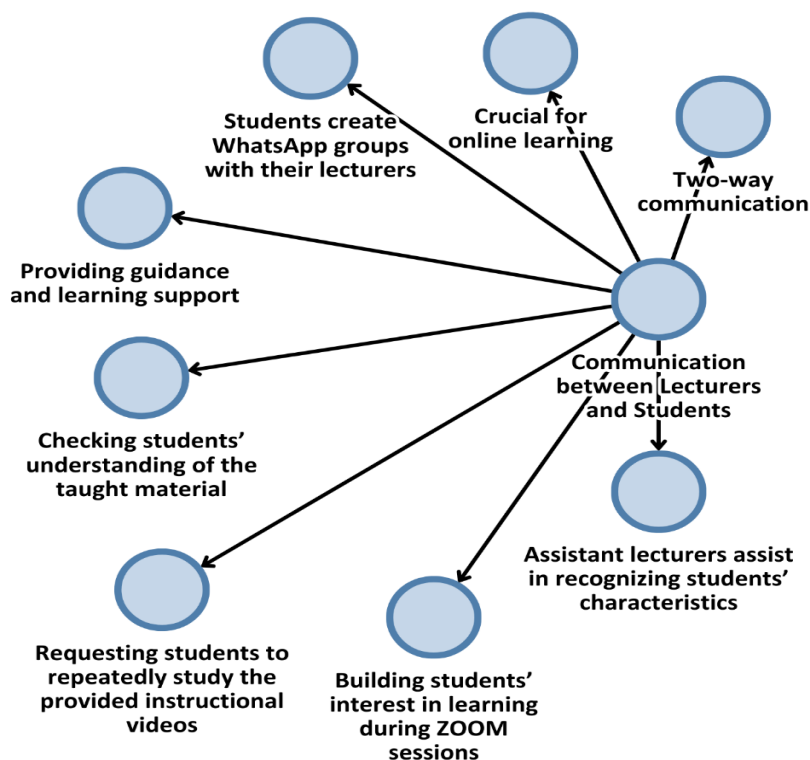

Figure 4: Roles of Communication between Lecturers and Students

It can be observed that communication between lecturers and students is intense. Firstly, this communication occurs bidirectionally (two-way communication). In this case, lecturers, along with assistant lecturers, ensure that students can use learning tools safely. For instance, if a student cannot use sharp objects, it will be replaced with a safer alternative. In addition, during learning sessions, lecturers and assistant lecturers must ensure that students have a good understanding of the given material through discussions with them. If students do not understand, they can ask questions directly. During synchronous learning sessions, lecturers inquire about the designated companion who will be with the student throughout the session to ensure effective learning. When lecturers attempt to maintain students' focus on learning, they often use persuasion by providing rewards if students remain focused, such as allowing them to use their smartphones for a few minutes. However, due to limited capabilities, students with ASD may have difficulty receiving additional motivation to meet the expectations of others, as they tend to follow their respective desires in any situation. Moreover, this two-way interaction also occurs through communication media such as WhatsApp Groups and social media created by students themselves. In this setting, they try to communicate with their lecturers by adding their contact numbers to the group and engaging in conversations through social media. Although the content of discussions in WhatsApp is entirely students' daily conversations and

unrelated to learning contexts, sometimes students exceed boundaries when communicating with lecturers. They use inappropriate language and send messages during breaks or non-working hours.

Secondly, engaging in online learning is crucial. In this context, it means that in online learning during the pandemic, it is vital for students to experience direct learning with their lecturers. This can be achieved through synchronous learning, and these sessions are conducted quite frequently throughout the semester. According to lecturers, students with ASD need direct guidance and support from lecturers to comprehend the provided materials, alongside assistance at home from their families. The learning materials presented in both synchronous and asynchronous sessions are aligned to reinforce the student's understanding of the subject. The process involves students studying and completing asynchronous materials at home with assistance. Then, during synchronous sessions, both lecturers and students watch instructional videos and work on practical assignments together.

Thirdly, it involves providing guidance and learning assistance. This finding is related to the implementation of the vocational training center for LSBA students. In traditional face-to-face learning settings, students have dedicated spaces where they can creatively engage in projects exclusively assigned to them. These projects mainly involve handicrafts such as scented candles, crafted directly by LSBA students with the guidance of lecturers. These creations are then sold, and the payment received is considered a form of salary for the students. In the realm of online learning, lecturers strategically channel the marketing of student-crafted products toward e-commerce platforms, fostering increased adaptability. Previously, sales were restricted to the location of the vocational training center only. In this context, the school aims to offer optimal facilities for LSBA students to be productive and independent. However, in practice, none of these students have secured employment with companies or other employers in the community.

Fourthly, it entails evaluating students' understanding of the instructed content. In this case, it has been observed that to assess students' understanding, lecturers use the camera devices that students utilize for online learning. Students are individually requested to point the camera toward the product they are working on. Subsequently, the examination is carried out by providing instructions to students slowly and one by one. This is necessary due to the limited capturing capacity of students. Information delivery must be gradual and concise. Furthermore, students can also ask the lecturer directly if they are confused about how to work on their projects, allowing the lecturer to repeat the explanation or demonstrate the process.

Fifthly, it involves fostering students' interest in learning during ZOOM sessions. It has been observed that LSBA students struggle to stay in front of the monitor for extended periods, making lengthy lessons less conducive. While they initially enjoy synchronous learning sessions, where they can interact directly with their lecturers and peers on the screen, many of them find pleasure in observing conversations during the learning process. Their need for interaction is quite high, leading to increased excitement at the beginning of the lesson. However, to keep them engaged and interactive throughout the learning process, lecturers must individually nurture students' interest in learning. This results in a longer time to achieve

competencies. Without such an approach, there is a high likelihood that students may not grasp the material, and their work may be less accurate. Many students also pose questions to the lecturers during these synchronous sessions.

The Tasks of Lecturers and Assistant Lecturers in Online Learning

Lecturers are responsible for delivering the material and ensuring that each student understands it, both in online and offline settings. In offline scenarios, lecturers act as direct tutors for each student, especially in practical courses. They provide direct tutoring to ensure that each student can complete practical assignments accurately. Meanwhile, assistant lecturers play a role in conditioning students during class to ensure a conducive learning environment. With their specialized educational background, assistant lecturers have the expertise to recognize symptoms or clinical characteristics of students that may vary from one to another. They also have the ability to approach students, make them comfortable in the learning environment, and guide them. In the case of disruptive behavior, such as tantrums and manipulation, assistant lecturers are responsible for addressing these conditions and directing students to refocus on the learning process in class. Similarly, when the material provided by lecturers seems beyond the comprehension of students, assistant lecturers will explain it to the lecturers to adjust the content according to the student's abilities. Assistant lecturers will also individually accompany and guide students to ensure they understand the material and complete assignments correctly. The synergy between lecturers and assistant lecturers plays a crucial role in achieving effective and comfortable education for students.

Learning Conduciveness

The researchers have discovered that building students' interest in online learning requires face-to-face meetings through the ZOOM platform, allowing learners to interact directly and boosting their enthusiasm for learning. In essence, the synchronous sessions orchestrated by the school become a crucial aspect of learning during the pandemic for students with ASD.
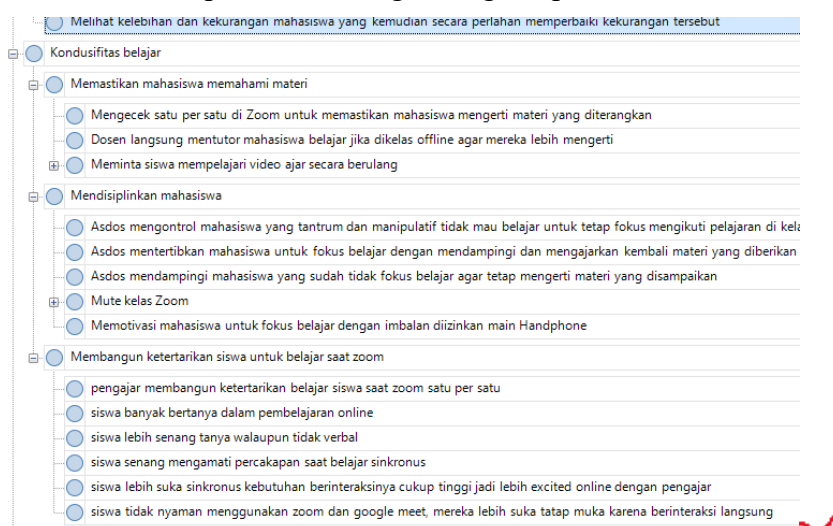

Figure 5: High Socialization Needs among Students

Students with ASD exhibit a pronounced need for interaction (see Figure 5), contributing to their heightened engagement in learning through direct interaction with lecturers and the opportunity to connect with peers.
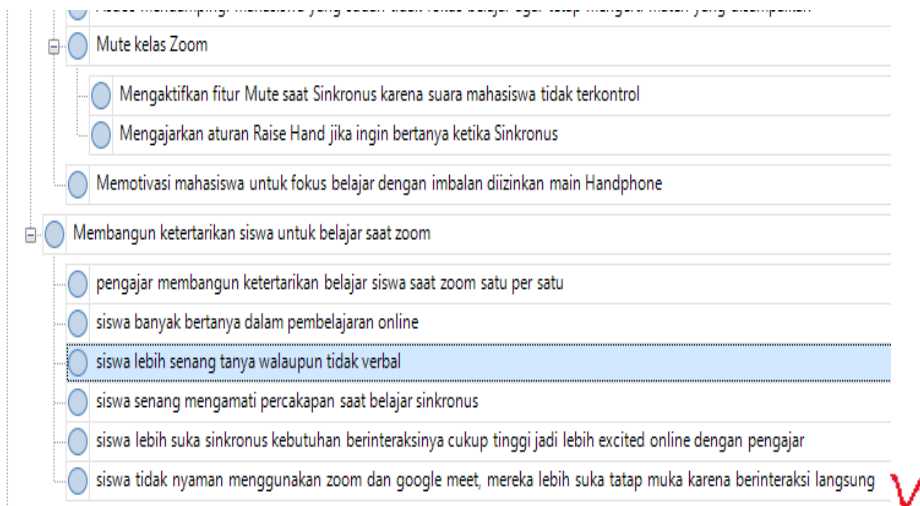

**Figure 6: Non-verbal Communication as an Attraction for
ASD Students in Online Learning**

Despite schools implementing technical aspects like muting participants' audio during synchronous learning, the mere observation of expressions and gestures of other participants brings joy and interest to students. Non-verbal communication (see Figure 6) proves effective in capturing the attention of students with ASD during online learning. However, lecturers note that ensuring student understanding of the material presented takes more time during online learning, as they must individually check each student's practical work on the screen during synchronous sessions. This prolonged process leads to a delayed achievement of learning competencies compared to traditional methods.

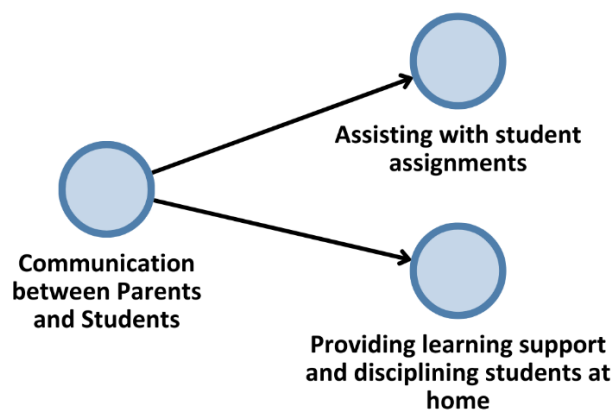**Communication between Parents and Students**

Figure 7: Roles of Communication between Parents and Students

In Figure 7, it is observed that the communication roles between these two actors are primarily focused on the process of learning assistance for students while at home. In online learning, there are quite a few asynchronous learning schedules, requiring the help of parents or other companions to teach students about the given learning materials. Additionally, the synchronous learning process also requires assistance, such as checking class links, working on assignments during ZOOM sessions, and ensuring that uploaded assignments to the submission link are done correctly.

Communication among Parents of ASD Students

Communication is also fostered by the community of parents to support the learning process. From the outset, the education administrators (i.e., the LSBA) aimed to create a support system to involve everyone in the learning process, thus achieving the students' maximum potential.

Translated Excerpt:

> "*Yes. Right from the start, we wanted to establish a support system where everyone is involved. Therefore, from the beginning, our school has its respective psychologist. We informed parents beforehand, during the open house event, where we explained and promoted the LSBA. We emphasized that the LSBA has a support system that requires collaborative efforts, involving parents, medical professionals, and therapists, as these children generally have their specific programs and therapies. This also includes their private teachers and caregivers; we involve everyone to build a support system that can help the children realize their maximum potential. We've discussed this from the beginning, and starting this year, we've implemented an agreement letter for parents once their child is accepted. Parents commit to providing what we call "our prayers," namely support from them. This commitment is put in writing and stamped, signifying their obligation to support their child throughout their studies here.*" (RW)
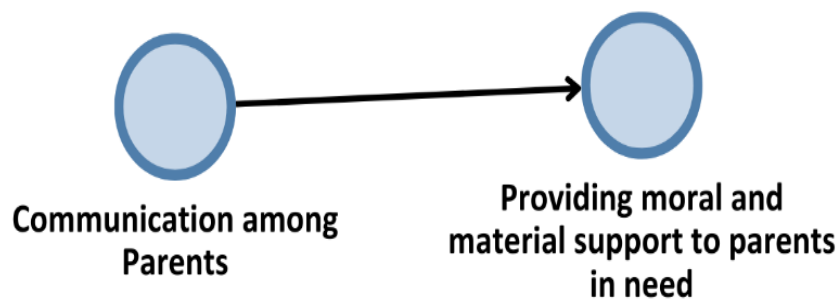

Figure 8. Roles of Communication among Parents of ASD Students

The communication undertaken by the parents of ASD students involves providing support, both moral and material. They utilize technology to communicate with each other through WhatsApp Groups, sharing information as well as personal stories. Parents also discuss the behavior of other parents deemed less cooperative during online learning, such as merely dropping off their child at school without offering support or assistance at home. In addition, the material support provided includes aiding in the provision of learning technology tools (i.e.,

laptops) for parents who are financially less able. Regarding social support in the learning process, there is assistance from fellow parents, for instance, to parents facing economic difficulties. In this case, they are supported by other parents who are financially more stable. There is also a WhatsApp group for parents to share, support, and exchange stories, purely initiated by the parents and not facilitated by the school. This community also provides input and support to the school, such as during specific competitions.

Translated Excerpt:

> "*Yes. We also get support from them, especially during competitions. For example, we have non-academic activities like musical dramas. Recently, there was a competition related to the Independence Day Celebration on the 17th of August. So, parents' support mostly involves helping their children participate in these activities. Additionally, we organize events like baking together. The activities are just something casual like that, Sir.*" (RW)

Social support is also evident through parents' initiative to establish a booth after students complete the vocational training. The booth is situated at the LSPR, and the LSBA—being a part of LSPR—receives support from the LSPR regarding LSBA students' access to facilities at the LSPR. The following is the excerpt translation from the interview.

Translated Excerpt:

> "*Yes. I usually see it from the batch 6. Those who have recently completed vocational training, meaning they haven't had the graduation ceremony yet. Oh, sorry, they've already had it. They are from batch 6. The parents of students from batch 6 took the initiative to open a booth. The booth is located at the LSPR, and they will help by selling something in the LSPR cafeteria.*" (RW)

The research findings above describe that the role of communication among various parties in the online learning process correlates with students' ability to absorb learning materials. Therefore, many educational institutions currently focus on training lecturers and parents with the expectation that through effective communication, they can enhance the student learning process (Seng *et al.*, 2022). In the ASD student learning process at the LSBA, the role of communication is implemented in the communication process.

The role of communication in social constructivism recognizes that the social aspect of learning—involving conversation, interaction with others, and the application of knowledge—is a crucial element in learning and achieving learning goals. In other words, all learning tasks (regardless of their difficulty level) can be accomplished by learners under the guidance of adults or in collaboration with peers.

This theory opens opportunities for students to collaborate with lecturers and peers in building knowledge and understanding (Akpan *et al.*, 2020). To conclude, social interaction is a key aspect of learning, as it plays a fundamental role in cognitive development.

IV. CONCLUSIONS

Based on the search results, it can be concluded that communication is crucial in the adaptation of online learning for students with autism spectrum disorder (ASD). Communication occurs between education managers, practitioner lecturers, parents, and students. Education managers play a significant role in adapting to online learning by providing guidelines, adapting digital content, and considering the unique needs of students with ASD. Collaboration, professional development, and the use of evidence-based practices are essential to effectively support students with ASD in online learning environments.

Communication between education managers and practitioner lecturers is important to ensure effective online learning. Assistant lecturers play a significant role in helping lecturers use technology and providing support to students. Communication between education managers and parents is necessary to provide learning assistance and ensure regularity in managing tasks and learning materials. Parental assistance is crucial in supporting child development, especially for those with behavioral problems. Communication between lecturers and students is established through interactions, and interaction is crucial for students with ASD to communicate and feel comfortable in class. Offline learning face-to-face with educators is better for interaction, but educators have their own way of building more intense interactions during online learning via Zoom.

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Conflict of Interest

"The authors declare no conflicts of interest".

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