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Bridging uncertainty: social support and health communication in assessing prospective ASD students for online learning

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The transition to online learning heightens uncertainty for prospective students with autism spectrum disorder (ASD), influencing their emotional readiness and academic adaptation. This study explores how assessment practices, strengthened by social support and health communication, help reduce that uncertainty. Using a qualitative case study design, the research examined institutional assessment practices at the London School Beyond Academy (LSBA) Jakarta, based on data collected that reflected the institution's online admission and assessment procedures during the COVID-19 pandemic. The findings show that uncertainty often arose from ambiguous expectations, limited structured interaction, and unclear instructional procedures. LSBA's online assessment combined interviews, behavioral observations, and structured online tasks while also considering parental involvement during sessions. Although challenges emerged (e.g., limited visibility of student behavior and the possibility of parental interference), structured protocols helped address these issues. The analysis demonstrates that social support (emotional, informational, and instrumental) and adaptive health communication strategies lower anxiety, strengthen resilience, and clarify expectations. The study contributes novelty by integrating the Uncertainty Reduction Theory (URT) with social support and health communication in the Indonesian context of online ASD assessments, an area rarely examined in current research. These findings suggest that integrating URT with social support and health communication offers a replicable model for inclusive assessment practices in digital education environments.

KEYWORDS

autism spectrum disorder, health communication, online learning, social support, uncertainty reduction theory

1 Introduction

The admission and placement of students with autism spectrum disorder (ASD) often involve high levels of uncertainty that affect not only academic readiness but also emotional resilience and social adjustment. For autistic students, predictability and structured interaction are essential; when expectations remain unclear, anxiety rises, and adaptation becomes more difficult (Graham, 2021; Goodwin et al., 2021). While uncertainty is a universal human experience often linked to negative emotions and ambiguity (Anderson et al., 2019), its impact is amplified for individuals with ASD because they rely heavily on clear routines, consistent communication, and stable environments (Dale et al., 2022).

This study is situated within the Indonesian context, where inclusive education for autistic students remains highly uneven and institutional resources are often constrained. The London

School Beyond Academy (LSBA), a pioneering institution in this field, provides a unique case to examine how communication and assessment strategies are adapted within local cultural expectations and infrastructural limitations. By focusing on LSBA's fully online admission process, this study narrows its analytical scope to the institutional perspective, enabling a fine-grained understanding of how uncertainty is negotiated by educators and administrators rather than by parents or students themselves. This circumscribed focus strengthens the study's transferability, showing how an institutional communication framework can support inclusive practices in comparable settings across developing countries.

The rapid growth of online education has intensified these challenges. Although online platforms offer flexibility and personalized instruction, they also reduce opportunities for face-to-face interaction, limit access to nonverbal cues, and frequently present ambiguous instructions (Polat et al., 2022). Research in Western contexts shows that autistic students struggle with the structural and social dimensions of digital learning and often need greater parental involvement (Adams et al., 2019; Maya et al., 2024). In Indonesia, these difficulties are compounded by uneven institutional resources, varying levels of digital literacy, and cultural expectations that families, especially mothers, must serve as active learning companions (Purnamasari, 2025). Despite these realities, little is known about how Indonesian schools manage uncertainty during admission and assessment, particularly in online learning environments.

To address this challenge, the present study applies the Uncertainty Reduction Theory (URT) (Berger and Calabrese, 1975). The URT explains how individuals reduce ambiguity in new interactions by gathering information through three strategies: passive (observing from a distance), active (seeking indirect information), and interactive (engaging directly to clarify uncertainty). This theoretical lens is highly relevant in ASD contexts, where uncertainty arises in communication and learning. In online assessments, educators may use passive strategies by reviewing students' routines through parental reports, apply active strategies by consulting colleagues or prior records, and adopt interactive strategies through structured online tasks and interviews. The URT therefore helps explain how schools, families, and students exchange information to lower anxiety, clarify expectations, and strengthen readiness for digital learning.

In addition to the URT, insights from social support and health communication provide complementary perspectives. Social support research highlights how emotional, informational, and instrumental assistance reduce psychological stress and build resilience among families of children with ASD (Bi et al., 2022; Ayasrah et al., 2023). In Indonesia, parents often rely on virtual communities to share coping strategies, demonstrating the importance of collective support systems (Purnamasari et al., 2019). Health communication studies further emphasize that adaptive and transparent communication enhances understanding and helps autistic individuals and their caregivers navigate uncertain environments (Araujo et al., 2022). Integrating these perspectives with the URT positions uncertainty not only as an individual cognitive challenge but also as a relational process shaped by the quality of communication and the support exchanged between institutions, families, and students.

The context of this study is the LSBA in Jakarta, a specialized institution that offers vocational and academic programs for young people with ASD. During the COVID-19 pandemic, LSBA moved its admission process fully online, replacing face-to-face assessments with online interviews with students and parents, structured observations of home routines, and remote cognitive and academic testing. While this shift ensured continuity, it also introduced challenges such as reduced accuracy

in behavioral observation and the possibility of unacknowledged parental assistance. These dynamics demonstrate why online assessments for ASD students in Indonesia are uniquely complex and why communication and support frameworks play a critical role in managing uncertainty.

Within this context, the present study makes two contributions. First, it applies the URT to online assessments for autistic students, showing how institutions, families, and students use passive, active, and interactive strategies. Second, it situates these practices within the Indonesian context, emphasizing the interplay between institutional procedures, cultural expectations of family involvement, and the role of communication in reducing uncertainty. The novelty of this study lies in connecting the URT with social support and health communication, framing assessment not only as a diagnostic tool but also as a communicative intervention that prepares autistic students to adapt to online learning.

While the URT has been widely applied in studies of interpersonal encounters and mediated communication (Xing, 2023), its use in special education contexts remains limited. Most URT research focuses on dyadic relationships in dating, intercultural interactions, or social networking sites, leaving a gap in understanding how institutions negotiate uncertainty during educational assessments. At the same time, emerging research on online assessments for students with disabilities raises concerns about validity, accessibility, and parental involvement, all of which demand a broader theoretical framing (Lomellini et al., 2025; Prayogo and Setiawan, 2022). By situating the URT within the domains of social support and health communication, this study addresses these gaps and argues that institutional communication practices play a decisive role in reducing uncertainty for autistic students and their families during the admission process.

In summary, although prior literature has examined uncertainty and inclusion in digital learning, little is known about how Indonesian institutions address these challenges during the critical stage of student assessment. This study fills that gap by analyzing assessment practices at LSBA Jakarta and exploring how social support and communication strategies reduce uncertainty for prospective ASD students. By integrating the URT with insights from health communication and social support, the study contributes a theoretical and practical model for inclusive, adaptive, and uncertainty-reducing assessment practices in digital education environments.

In doing so, the study contributes both theoretically, by integrating the URT with social support and health communication, and practically, by offering evidence-based guidance for institutions that seek to design ethical, transparent, and contextually grounded online assessments for autistic learners.

2 Methods

This study used a qualitative descriptive design with a single-case study approach (Yin, 2018), selected to capture the depth and complexity of assessment practices for prospective autistic students spectrum disorder (ASD) in an Indonesian institutional setting. The design followed established qualitative research principles emphasizing contextual interpretation, reflexivity, and methodological transparency (Creswell and Creswell, 2018). A case study design fit the research purpose because it allowed an in-depth examination of real-life processes, in this case, online assessment procedures at a specialized institution, within their natural context.

The research took place at the LSBA Jakarta, a private institution that offers vocational and academic programs for young adults with

ASD. Nine key informants were purposively selected to represent institutional perspectives. They included the operations director, deputy head of academic affairs, IT manager, academic coordinator, two academic lecturers, and three vocational instructors specializing in applied arts, photography, and graphic design. This composition enabled the study to capture managerial, technical, and pedagogical dimensions of the assessment process. All participants met inclusion criteria requiring direct involvement in the school's online admission or instructional assessment processes. They represented varied levels of institutional responsibility and professional experience, ranging from 5 to 20 years in special-needs education and digital learning management. This composition ensured role diversity across managerial, pedagogical, and technological functions, aligning with the study's aim to explore institutional communication and decision-making from multiple vantage points. Although the focus remained on institutional actors rather than parents or students, this range of perspectives provided valuable insights into organizational strategies for managing uncertainty.

The data-collection window spanned approximately three months, from September 2022 to November 2022, at the LSBA Jakarta office. The study examined institutional assessment and communication practices that had been implemented during the COVID-19 pandemic period (2020–2022), when the institution conducted all admission and instructional activities online. Although by late 2022 face-to-face learning had resumed, the data collection focused on documenting and analyzing how LSBA managed online assessments during the pandemic years. Non-participant observations were conducted across recorded and simulated online assessment sessions, generating approximately eight hours of observation notes.

In addition to interviews and observations, documentary and digital materials were analyzed to contextualize institutional communication practices. These included admission guidelines, assessment templates, internal policy memos, and posts from LSBA's official Instagram account published between 2020 and 2022. In total, twenty-four institutional documents and thirty-five social media posts were examined. The analysis applied qualitative content analysis to identify how institutional messages conveyed procedural clarity, emotional reassurance, and transparency. These artifacts served as supplementary data, illustrative rather than primary sources, helping to trace how LSBA communicated expectations and social support cues to families during the online assessment period.

All interviews were transcribed verbatim, and observation notes were compiled into detailed textual records. Data analysis followed Miles et al.'s (2014) interactive model, which consists of three iterative stages: data reduction, data display, and conclusion drawing/verification. NVivo 12 Pro software supported systematic coding. Coding was conducted collaboratively by two researchers trained in qualitative analysis. Each transcript and observation note was initially coded independently to identify meaning units related to assessment practices, uncertainty management, and communication strategies. The researchers then compared and reconciled their preliminary code lists through analytic discussions, consolidating them into a shared codebook that included definitions, inclusion criteria, and exemplar excerpts. The process then proceeded with open coding to identify meaningful segments from transcripts and notes. Axial coding clustered related codes into categories such as "sources of uncertainty," "communication strategies," and "parental involvement." These categories were synthesized into broader themes and interpreted through the lens of the Uncertainty Reduction Theory (URT), particularly its three strategies of passive, active, and interactive information seeking. Discrepancies were resolved through

reflexive discussion rather than statistical reliability checks, following the interpretive orientation of the study, and final agreement was reached before closing the analytic cycle.

The sample size was determined according to the principle of information power (Malterud et al., 2016), whereby adequacy depends on the specificity of the study aim, the expertise of participants, and the richness of dialogue. After the seventh interview, no substantially new uncertainty-related categories emerged, and subsequent interviews served mainly to confirm and refine existing patterns. This point of thematic redundancy signalled conceptual saturation, indicating that the dataset sufficiently represented the institutional dynamics under study.

To strengthen trustworthiness, the study employed multiple and complementary strategies. Triangulation was achieved by comparing findings across interviews, observations, and document analysis. Member checking involved selectively sharing preliminary interpretations with two institutional representatives to confirm thematic resonance while maintaining confidentiality. Peer debriefing sessions were held at multiple stages of analysis to test category coherence, challenge interpretive bias, and refine the evolving codebook. An audit trail was maintained throughout the research process to document analytic decisions, codebook iterations, and reflexive memos written after each coding session. Researcher reflexivity was emphasized, particularly given the close collaboration with LSBA staff, and field notes were used to record contextual impressions and emerging analytical insights. Although intercoder reliability statistics were not calculated, consistent with the interpretive orientation of the study, credibility and dependability were reinforced through transparent documentation, collaborative analysis, and systematic verification of data interpretations.

To enhance methodological transparency and replicability, Supplementary material accompany this article. Supplementary Appendix A presents the semi-structured interview guide with prompts mapped to Uncertainty Reduction Theory (URT), social-support, and health-communication constructs. Supplementary Appendix B provides an excerpted codebook summarising the key codes, definitions, and representative quotes that illustrate the analytic logic. Both appendices support methodological clarity while protecting participant confidentiality.

The study received an ethical exemption from the Faculty of Public Health, Universitas Muhammadiyah Jakarta (FKM UMJ), Indonesia. All participants provided verbal informed consent, and identifying details were removed from transcripts and reports to maintain confidentiality in accordance with research ethics standards.

3 Results and discussion

3.1 Results

3.1.1 Participants

This study involved nine key informants from the LSBA Jakarta, an institution that provides vocational and academic programs for young people with autism spectrum disorder (ASD). The participants were purposively selected to represent institutional perspectives on assessment and admission. Each informant regularly conducted assessments and provided direct teaching for students with ASD.

The operations director explained the institutional rationale for conducting assessments online, emphasizing logistical constraints and the importance of evaluating students' readiness before entry.

"We have to make sure that before students join the online learning process, we already know their abilities, their challenges, and how to support them. That's why the assessment is important, even if we have to do it virtually." (Operations Director, Interview, 2022)¹

Two educators described the day-to-day realities of assessing students online, including the tools used, the flow of activities, and the behavioral responses observed. One educator reflected as follows.

"During the online assessment, we try to see not only how the student answers tasks, but also how they respond when facing difficulties. It gives us clues about their communication and self-control." (Educator 1, Interview, 2022)

Another educator emphasized the role of family involvement during the process, as follows.

"Parents often sit beside the student. Sometimes it helps, but sometimes it makes us wonder if the student is really working independently." (Educator 2, Interview, 2022)

Together, these perspectives highlight different dimensions of the process: the administrator focused on institutional procedures and strategic goals, while the educators offered practical insights into the dynamics of online assessments with ASD students.

3.2 An overview of the assessment procedure (online format)

At LSBA Jakarta, the assessment of prospective autistic students takes place entirely online. The process includes three interconnected stages designed to capture information about each student's abilities, communication patterns, and readiness for online learning.

The first stage involves a structured interview with the students (when possible) and the parents or caregivers. This stage focuses on daily routines, preferred activities, and behavioral tendencies. According to the operations director, the objective is to gather preliminary information that reduces uncertainty about the student's profile before admission.

"The interview gives us the first picture. Parents tell us how their child usually behaves, what challenges they face, and what works for them. We need this context before moving to observation and tasks." (Operations Director, Interview, 2022)

The second stage centers on behavioral observation through video conferencing platforms. During these sessions, educators monitor how students interact with digital instructions, respond to tasks, and cope with distractions in their home environments. One educator explained as follows.

"We watch how the student reacts to simple directions, how they stay on task, or if they need repeated prompts. Even small reactions tell us a lot about communication and concentration." (Educator 1, Interview, 2022)

The third stage focuses on online academic and cognitive tasks. Students complete structured exercises such as reading passages, writing short responses, and solving numerical problems. To maintain fairness, assessors ask students to show their work area through the camera before starting the test. This procedure ensures appropriate use of materials and verifies that students work independently.

Challenges arise across all stages of the assessment. Technical limitations, including unstable internet connections and restricted camera angles, sometimes prevent assessors from fully observing student behaviors. In addition, the presence of parents near the student is common. While parents often assist with setting up devices, their involvement occasionally extends beyond technical support. One educator reflected as follows.

"Sometimes we sense that parents give hints or help the student outside the camera frame. It is not always intentional, but it affects how authentic the assessment becomes." (Educator 2, Interview, 2022)

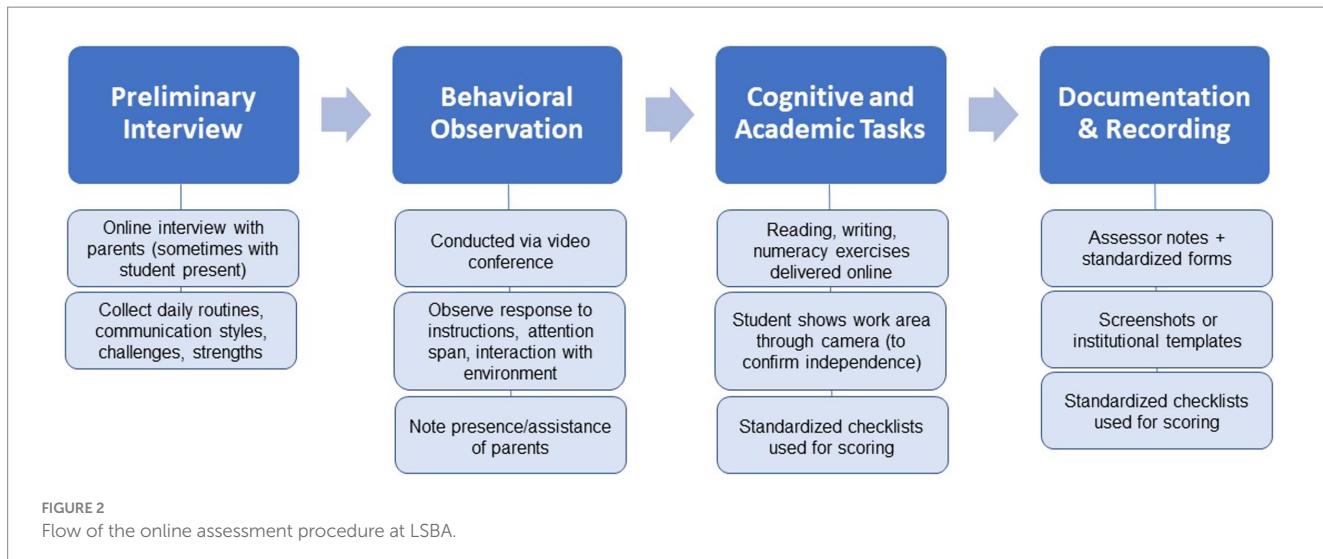
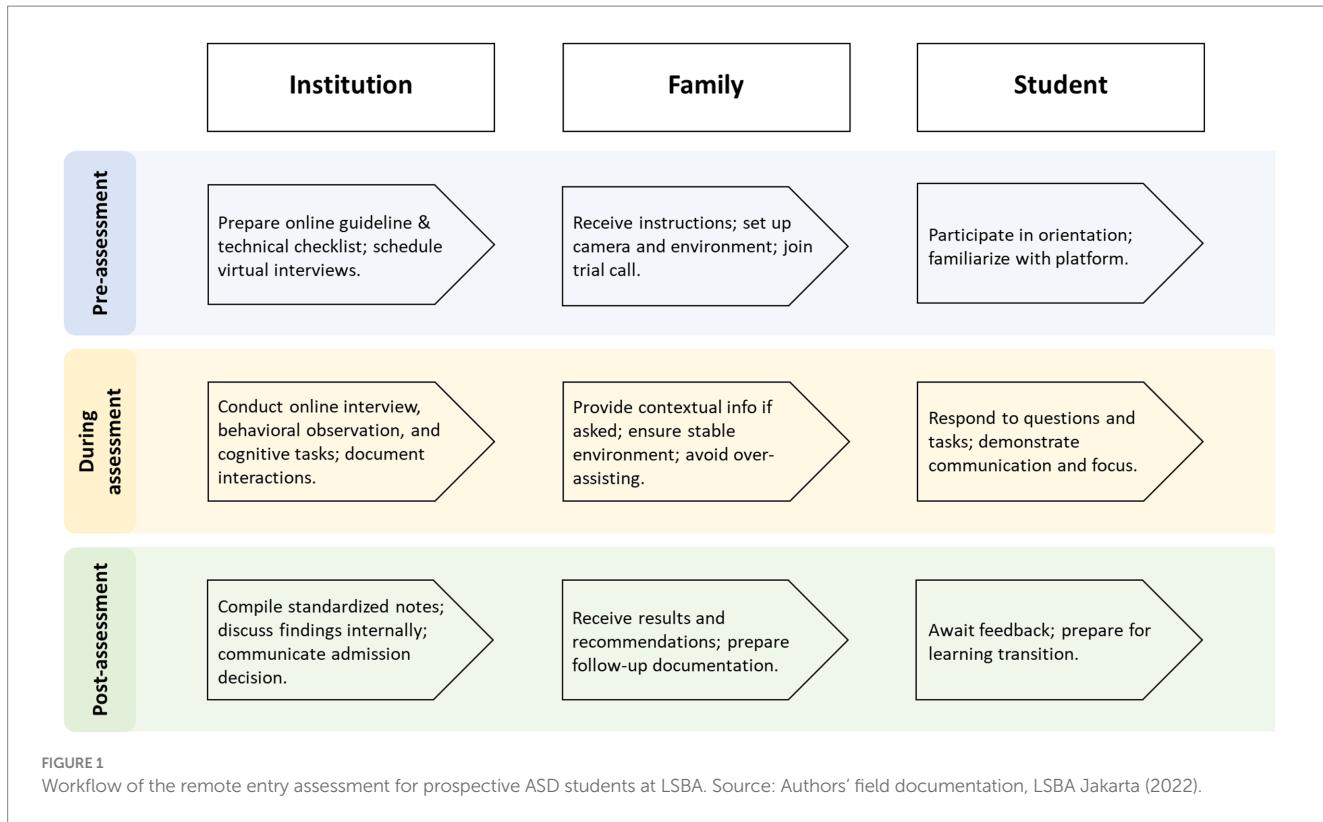
The online assessment process at LSBA follows a structured sequence that integrates interviews, behavioral observations, and academic tasks. As summarized in Figure 1, the procedure begins with a preliminary online interview with parents and, when possible, the student. This stage provides contextual information about daily routines, communication styles, and prior educational experiences. The second stage involves direct observation through video conferencing, during which educators monitor how students respond to simple directions, sustain attention, and interact with their environment in real time. The final stage consists of structured cognitive and academic tasks delivered remotely, requiring students to complete reading, writing, and numeracy exercises under virtual supervision. At each stage, assessors document behaviors and responses using standardized checklists.

To clarify the procedural sequence and stakeholder roles, Figure 1 presents the overall workflow of LSBA's remote entry assessment. The swim-lane diagram distinguishes the activities of the institution, family, and student across three phases, pre-assessment, during assessment, and post-assessment. This visualization shows that uncertainty reduction is achieved not only through the technical sequence of assessment tasks but also through coordinated communication among all parties. By explicitly separating the roles, the figure underscores how institutional guidance and parental preparation collectively enable students to engage more confidently in the online evaluation process (Figure 2).

3.3 Observed phenomena during online assessments

The online assessments revealed a wide range of behavioral and communication characteristics among prospective autistic students. Educators emphasized that while academic tasks provided valuable

¹ Source: Institutional interviews and observation notes, LSBA Jakarta, March–July 2024.



information, the most significant insights often came from students' spontaneous reactions during interaction. One educator explained as follows.

"Sometimes the student answers correctly, but what interests us more is how they react when they do not know the answer, whether they ask for clarification, remain silent, or show other behaviors." (Educator 1, Interview, 2022)

Another recurring feature was the varying degree of parental involvement. Parents frequently remained near the student during

sessions, which occasionally complicated the assessment process. One educator noted as follows.

"We often see parents helping to keep the student calm or giving prompts. It's understandable, but it makes it harder for us to know the student's actual independent ability." (Educator 2, Interview, 2022)

The assessment data were organized into descriptive categories of communication and learning challenges. Table 1 presents these challenges, highlighting communication issues such as limited

TABLE 1 Communication and learning characteristics of students with ASD.

Theme	Description	Representative quote	Prevalence
Delayed verbal response	Some students required additional processing time before answering verbal questions or following instructions.	“We wait a few seconds before repeating the question, they need that pause to process the instruction.” (Educator)	Common
Literal interpretation of tasks	Students tended to interpret instructions literally and required clarification to grasp abstract questions.	“When we asked ‘How do you feel about this picture?’, some answered only with colours or shapes they saw.” (Teacher)	Occasional
Over-focus on preferred topics	Students showed intense engagement when the activity matched their specific interests, often unrelated to task goals.	“If the topic matched their hobby, like trains or animals, they became very focused and enthusiastic.” (Educator)	Common
Difficulty sustaining attention	Students were easily distracted by environmental stimuli or technical disturbances.	“Some lost focus when siblings appeared on camera or when the sound lagged.” (Observation note)	Common
Limited camera gaze/eye contact	Many avoided direct eye contact through the camera, affecting nonverbal communication cues.	“They look at the side of the screen rather than the teacher, so we gauge engagement through voice tone instead.” (Teacher)	Common
Variable comprehension of digital tools	Differences in familiarity with platforms or devices influenced participation and performance.	“Some could navigate easily, but others got confused switching windows or using the chat box.” (IT staff)	Occasional

Data derived from institutional interviews ($n = 9$) and online observations (8 sessions) conducted at LSBA Jakarta, September to November 2022.

Prevalence indicators (common/occasional/rare) are qualitative estimates based on cross-case comparison among informants and observed sessions.

self-confidence and reversed sentence structures, alongside learning difficulties including slow progress and short-term memory problems.

From Table 1, educators noted that many students experienced difficulties in verbal communication and learning pace. For example, some students relied on distinctive gestures or vocalizations to communicate, while in academic tasks, they demonstrated slow recall and struggled to sustain attention. These challenges appeared consistently across multiple sessions, reinforcing the importance of holistic observation.

In addition to communication and learning, difficulties with self-control and regulation frequently emerged. Table 2 summarizes these findings, dividing them into categories such as motor-related challenges, impulsive or overactive behaviors, and limited emotional regulation.

Educators reported motor issues such as delayed movements and repetitive actions, including hand-flapping or object-spinning, often understood as self-stimulatory behaviors. They also observed aggressive, passive, and overactive behaviors among some students, ranging from refusal to respond to excessive activity during sessions. One educator reflected as follows.

“In online settings, we see both extremes. Some students are very quiet and passive, while others move around constantly. These behaviors are harder to interpret because we cannot always see the full environment.” (Educator 1, Interview, 2022)

These patterns of communication difficulties, learning challenges, and self-control behaviors shaped the main set of phenomena observed during the online assessments. They formed the foundation for the later analysis of how students and educators experienced uncertainty in the admission process.

Figure 1 illustrates the step-by-step progression of the online assessment. It highlights how LSBA adapted conventional face-to-face assessments into a virtual format while striving to maintain the integrity of observation and testing.

3.4 Documentary sources and institutional communication

In addition to interviews and observations, this study analyzed documentary materials produced by LSBA, including admission guidelines, assessment templates, and institutional communication distributed through social media platforms. These sources offered evidence of how the school reduced uncertainty for families by standardizing procedures and providing accessible information.

The admission guidelines outlined step-by-step instructions for families preparing their children for online assessment. These included technical directions such as positioning the camera, ensuring internet stability, and preparing necessary materials for the session. The operations director explained as follows.

“We make sure parents know what to prepare before the assessment day. Simple things like arranging the camera or preparing stationery can make the process smoother.” (Operations Director, Interview, 2022)

Educators also used assessment templates to document communication behaviors, learning responses, and self-control indicators. These forms promoted consistency in recording observations across different sessions. One educator described as follows.

“We follow a checklist so that every student is assessed with the same points. It helps us not to miss small details, especially in online settings where observation is more limited.” (Educator 2, Interview, 2022)

LSBA also disseminated institutional communication through its official Instagram account, which functioned as an outreach and informational platform. Posts included reminders about assessment schedules, visual examples of classroom activities, and motivational messages for parents and students. These posts served a dual purpose:

TABLE 2 Self-regulation challenges of students with ASD.

Theme	Description	Representative quote	Prevalence
Emotional fluctuation during tasks	Students showed rapid changes in mood or motivation, especially when facing difficult questions.	“If a task felt too hard, some immediately lost motivation or asked to stop.” (Teacher)	Common
Parental over-assistance	Parents often intervened beyond technical help, influencing task authenticity.	“Parents sometimes whisper hints or point to answers off-camera.” (Educator)	Common
Dependency on reassurance	Many students frequently sought verbal affirmation to continue tasks.	“They kept asking, ‘Is this right?’ after every question, needing constant encouragement.” (Observation note)	Common
Difficulty recovering from mistakes	Once frustrated, students struggled to resume focus or correct errors independently.	“When they made a mistake, they tended to freeze rather than try again.” (Educator)	Occasional
Limited self-monitoring	Some students could not evaluate their own performance without external prompts.	“They rarely know if they have finished correctly unless we confirm it.” (Teacher)	Common
Sensory distraction from home environment	Background noises or visual distractions reduced concentration during online tasks.	“Sounds from TV or family members easily drew their attention away.” (Observation note)	Common

Data derived from institutional interviews ($n = 9$) and online assessment observations (8 sessions) conducted at LSBA Jakarta, from September to November 2022. Prevalence categories reflect the relative frequency of each pattern across informants and observed sessions.

they informed families about procedures while also providing emotional support. One educator noted as follows.

“Social media helps parents feel that they are not alone. They see other parents’ comments, and it builds a sense of community, even if the assessment is online.” (Educator 1, Interview, 2022)

These documents and digital communication strategies show that LSBA used not only formal guidelines but also social media to foster transparency, sustain engagement, and reduce uncertainty for families and students during the transition to online assessments.

4 Discussion

This study examined how online assessment practices at the LSBA reduced uncertainty for prospective autistic students. Drawing on perspectives from nine institutional informants, the findings show that LSBA implemented a multi-stage online assessment (interview, observation, and task performance) and combined standardized documentation with informal parent communication to construct a working profile of each student. At the same time, the remote format limited the accuracy of behavioral observation and introduced parental presence as a recurring procedural complication.

Mapping these findings onto the URT (Berger and Calabrese, 1975) clarifies how LSBA managed uncertainty in practice and highlights remaining gaps. The URT identifies three primary strategies (passive, active, and interactive) that individuals use to reduce ambiguity in novel encounters. In the LSBA case, each strategy emerged in concrete ways. Passive strategies appeared in the form of information gathering from parent reports and documentary reviews. Assessors solicited routines, hobbies, and daily patterns from caregivers to construct an initial model of the student’s profile. This practice provided baseline expectations about behavior that could not be directly observed in an online setting.

Active strategies emerged when staff corroborated information using institutional records, peer consultation, and standardized checklists. LSBA’s use of assessment templates ensured consistency across sessions and served as an institutional mechanism to reduce inter-rater uncertainty. These templates also made information

transferable across professionals, including psychologists, teachers, and program coordinators, which represents a critical active strategy when direct observation is limited.

LSBA operationalized interactive strategies through synchronous online tasks and structured interviews with students whenever possible. One salient example involved requiring students to display their entire work area on camera. This practice served as an interactive attempt to verify independence and reduce uncertainty about whether task performance reflected the student’s unaided abilities. However, the findings also show that technological limitations (e.g., restricted camera angles and unstable bandwidth), along with invisible parental assistance, reduced the reliability of these observations. As a result, interactive strategies succeeded in reducing some forms of uncertainty while leaving others, such as covert parental involvement, unresolved.

In Western contexts, autism assessment practices often rely on standardized instruments and resource-intensive professional systems that assume ready access to specialists (Fletcher-Watson and Happé, 2019). Cross-cultural scholarship, however, demonstrates that these Western ideals of “normality” do not transfer uniformly across different settings (Atherton et al., 2023). In low- and middle-income countries, including Indonesia, cultural norms, parental roles, and institutional capacity strongly influence how autism is identified and supported (de Leeuw et al., 2020). These differences suggest that institutions cannot simply transplant Western models of uncertainty reduction. Instead, LSBA adapted the interactive dimension of the URT by mobilizing parental collaboration and community resources as substitutes for professional-intensive systems. This contrast highlights how cultural and structural conditions in Indonesia shape the practical application of URT strategies in online ASD assessments.

Interpreting these URT mappings through the lens of social-support and health-communication literature deepens the understanding of why certain practices mattered and how they functioned relationally. Social support (emotional, informational, and instrumental) served as a resource and as a complicating factor. LSBA’s outreach efforts, including public posts and caregiver guidance on Instagram as well as direct communication, provided parents with informational and emotional support. These resources helped families prepare logically and psychologically for online assessment. Such support likely reduced caregiver anxiety and eased logistical

challenges, which in turn indirectly lowered institutional uncertainty about participation. However, close parental involvement also risked conflating caregiver-scaffolded performance with independent student ability (Bi et al., 2022; Purnamasari et al., 2019).

Health communication principles further explain how messaging and framed instructions influenced uncertainty [EFSA Panel on Plant Protection Products and their Residues (PPR) et al., 2019]. Clear procedural messages (e.g., directions on camera positioning, materials lists, and test rules) functioned as “uncertainty-reducing signals” for families. When LSBA used accessible templates and social media to standardize expectations, it lowered ambiguity around the mechanics of assessment. Conversely, vague instructions or limited digital literacy among families sustained procedural ambiguity. These findings suggest that health-communication best practices, including clarity, multimodal messaging, and empathic framing, are integral to ensuring assessment validity in remote ASD education contexts (Araujo et al., 2022; Dale et al., 2022).

Together, these strands reconceptualize assessment as a communicative intervention. In online contexts, assessment is not only diagnostic but also an information-exchange system that builds mutual expectations among the institution, family, and student. Practically, this means that (a) instruments and procedures must be designed to measure ability while also generating reliable signals under remote constraints, and (b) institutions must intentionally manage the social channels (e.g., templates, pre-assessment coaching, and community posts) that shape those signals. This argument extends the URT by foregrounding institutional media (documents, social media, and checklists) as active components of uncertainty reduction in educational assessment. Such an extension is especially relevant in lower-resource settings where standardized protocols remain less established.

This study broadens the URT beyond its conventional applications in interpersonal and mediated encounters by demonstrating its relevance to institutional-level educational assessments. Unlike previous research that focused on dyadic or Western contexts, our findings show how the URT, combined with social support and health communication, explains the dynamics of online admission for ASD students in Indonesia. This framing positions assessment not only as diagnostic but also as a communicative intervention that prepares students for adaptive online learning.

Rather than proposing a replicable model, this study offers a contextually transferable framework that illustrates how institutional communication practices can reduce uncertainty in online assessment for autistic students. The framework emphasises adaptability over replication: what proves effective at LSBA stems from the alignment between institutional values, educator reflexivity, and the digital infrastructures available. Consequently, the findings are best interpreted as an example of how inclusive institutions may cultivate communicative sensitivity and ethical transparency when operating under resource and contextual constraints. This perspective underscores that meaningful inclusion is not achieved through uniform application of models but through the situated negotiation of trust, clarity, and collaboration within each institutional ecology.

4.1 Practical implications

Several concrete recommendations follow. First, assessments should combine modalities: synchronous tasks to observe

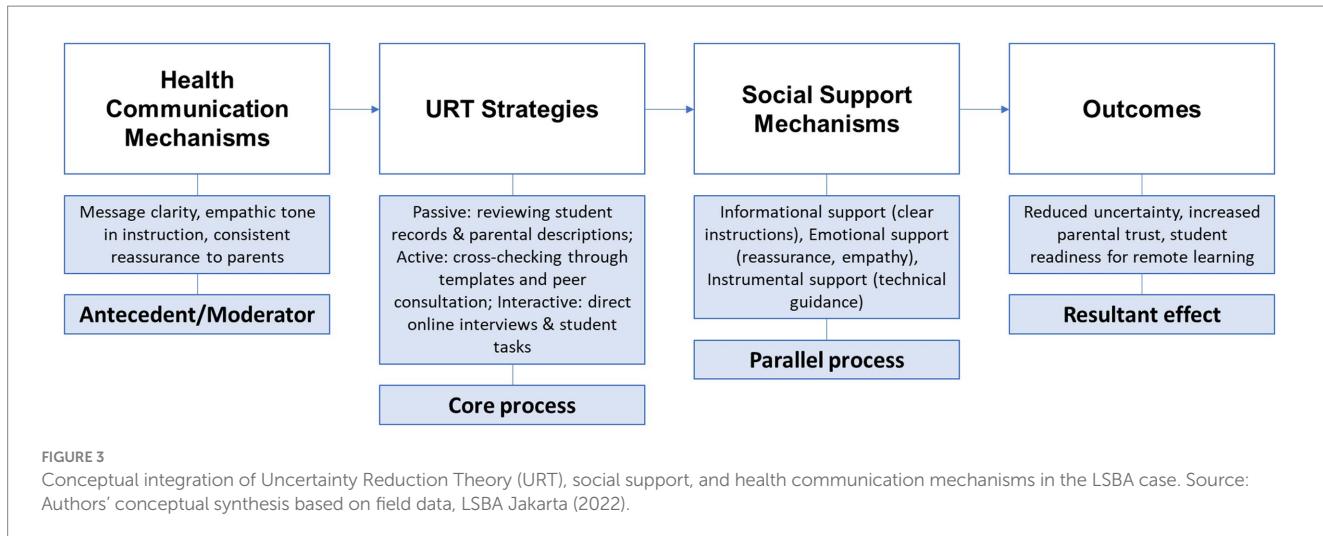
interactive responses and asynchronous portfolios or video submissions to triangulate behavior across contexts. Second, standardized pre-assessment protocols should include a short video orientation for families (explaining camera setup and permitted assistance) along with a signed agreement about allowable support during tasks. These steps can reduce hidden parental involvement while maintaining constructive family participation. Third, assessor training should emphasize remote-specific observation heuristics (e.g., coding partial visibility and flagging potential external assistance) and include procedures for cross-checking parent reports against behavioral evidence. Finally, institutions must calibrate communication: clear, empathetic messages can reduce anxiety and align expectations, but they should be paired with explicit procedural safeguards to protect assessment validity. These measures are low-cost and high-impact, making them feasible for institutions in Indonesia and similar contexts (Goodwin et al., 2021; Polat et al., 2022).

4.2 Limitations and directions for future research

The study has limitations due to its small, institution-focused sample (nine institutional informants) and the institutional orientation of the data. Parents' and students' direct perspectives are underrepresented, which restricts claims about lived uncertainty in home settings. Future studies should test the URT framework with broader samples that include caregivers and students, as well as hybrid models that combine online and in-person assessment. Methodologically, online observation inherently limits behavioral fidelity. Further research should evaluate hybrid assessment models and empirically test whether proposed protocols (e.g., pre-assessment orientations and standardized workspace videos) enhance measurement validity and reduce perceived uncertainty.

While this study prioritised depth over breadth, several contextual factors may have influenced the interpretation of findings. First, the online assessment setting occasionally involved parental assistance, which may have affected the authenticity of student performance. Second, technical disparities, such as internet bandwidth, device quality, and camera positioning, potentially introduced observational bias during the evaluation process. Third, educators' prior familiarity with some families could subtly shape their interpretive stance when assessing student readiness. These factors do not undermine the analytical coherence of the study but remind readers that institutional assessments of autistic students, especially in virtual settings, are inevitably situated within social, relational, and technological contingencies. Recognising these contingencies provides a more transparent basis for assessing the study's credibility and transferability.

This study's findings must be interpreted in light of its institutional focus. The analysis primarily reflects the perspectives of educators and administrators, whose roles inherently frame inclusion and uncertainty through organisational responsibilities. The absence of direct participation from students and parents means that the lived, emotional dimensions of uncertainty are only indirectly represented. Recognising this limitation is essential not only for transparency but also for ethical reflexivity: educational communication involves multiple stakeholders whose voices shape the meaning of inclusion. Future studies are encouraged to engage



autistic students and caregivers more directly, ensuring that institutional insights are complemented by experiential accounts from those most affected by educational uncertainty.

Figure 3 summarizes the conceptual relationships among the three theoretical lenses used in this study. Health communication mechanisms, such as message clarity, empathetic tone, and reassurance, operate as antecedents and moderators that facilitate uncertainty reduction during remote assessments. The core process involves the three URT strategies: passive (reviewing student records and parental descriptions), active (cross-checking through templates and peer consultation), and interactive (direct online interviews and student tasks). In parallel, social support mechanisms, informational, emotional, and instrumental, reinforce these strategies by sustaining engagement and trust among assessors and families. Together, these interrelated processes produce the resultant effects of reduced uncertainty, strengthened parental trust, and improved student readiness for remote learning.

5 Conclusion

This study examined how online assessment practices at the London School Beyond Academy (LSBA) in Jakarta addressed uncertainty for prospective autistic students. The findings demonstrate that the online assessment process, structured through interviews, observations, and cognitive tasks, provided schools with essential insights into students' abilities and challenges. At the same time, it exposed limitations related to parental involvement, technological constraints, and the restricted visibility of student behavior.

Applying the URT, the study shows that institutional strategies, whether passive (document review), active (standardized checklists), or interactive (direct online tasks), helped reduce ambiguity but also generated new forms of uncertainty in the digital environment. By integrating perspectives from social support and health communication, the study highlights that family involvement and institutional messaging served as necessary supports and potential sources of distortion in online assessment.

The contribution of this research lies in reconceptualizing online assessment as a communicative intervention rather than solely a

diagnostic tool. In the Indonesian context, where institutional resources and cultural expectations of parental roles differ from Western systems, this perspective underscores the importance of structured protocols, clear communication, and triangulated data collection. Future research should expand the scope to include parents' and students' direct perspectives while testing hybrid models that combine online and in-person assessments for greater validity.

This study demonstrates that online assessments for students with autism spectrum disorder (ASD) in Indonesia can be understood as communicative processes of uncertainty reduction, where schools, families, and students enact passive, active, and interactive strategies. By integrating the URT with social support and health communication, the research contributes a novel theoretical framework for understanding institutional assessment in special education. Practically, the findings suggest that schools should design assessment protocols that not only measure ability but also manage uncertainty through clear communication, structured support, and cultural sensitivity. More broadly, this work highlights the importance of recognizing assessment as a communicative intervention that fosters readiness and resilience in digital learning environments.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors without undue reservation.

Ethics statement

The study received an ethical exemption from the Faculty of Public Health, Universitas Muhammadiyah Jakarta (FKM UMJ), Indonesia. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

Author contributions

OP: Conceptualization, Writing – review & editing, Methodology, Resources, Writing – original draft, Visualization. DF: Validation, Writing – original draft, Supervision, Methodology, Conceptualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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