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DEVELOPING AN ENGLISH-SPEAKING SKILLS ASSESSMENT RUBRIC FOR AUTISM CHILDREN USING UNIVERSAL DESIGN FOR LEARNING

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ABSTRACT

This study aims to develop an adaptive English-speaking skills assessment rubric for children with Autism Spectrum Disorder (ASD) using the principles of Universal Design for Learning (UDL) in a Special Education School (SLB). The need for an inclusive and flexible assessment tool that accommodates the diverse communication needs of children with ASD in language learning contexts, particularly English, is crucial. The research follows a systematic methodology consisting of needs analysis, rubric development, expert validation, pilot testing, revisions, and finalization. The rubric developed integrates UDL principles to ensure that assessments capture both verbal and non-verbal communication skills, such as gestures, visual aids, and assistive technologies. The findings from the expert validation process revealed that the rubric was clear, comprehensive, and adaptable to various student needs, providing a more holistic assessment of speaking skills. Teachers reported increased engagement and flexibility in using the rubric, which allowed students to express themselves in multiple ways. The pilot test indicated high inter-rater reliability (Cronbach's alpha = 0.85) and demonstrated that the rubric effectively assessed students with varying levels of proficiency. Students who previously struggled with verbal communication showed improvement through the use of non-verbal means, enhancing their participation in the assessment. This study highlights the potential of integrating UDL principles into assessment rubrics to support the inclusive education of children with ASD and provide more accurate and equitable evaluations of their language skills.

INTRODUCTION

Education is a fundamental right for every individual, including children with special needs such as autism. Children with Autism Spectrum Disorder (ASD) often face challenges in various aspects of their lives, including verbal communication (Litton et al., 2017) (UNESCO, 2005). Speaking skills in English are one of the key competencies in foreign language learning, which not only relate to cognitive abilities but also enhance self-confidence, social participation, and provide children with more opportunities to

engage in the social world. Therefore, developing English speaking skills for children with ASD in Special Education Schools (SLB) is crucial, ensuring they have equal opportunities to learn and develop (Mody et al., 2012) (Paul & Fahim, 2014) (Afrasiabi, 2018) (Afrasiabi, 2018).

However, in the context of inclusive education, children with ASD often encounter specific difficulties in verbal communication. These children tend to experience issues with pronunciation, sentence organization, and effective social interaction (Volkmar, 2019). In addition, social and sensory barriers, such as discomfort in interacting with others or anxiety in social situations, often hinder their communication. As a result, teaching and assessment of English-speaking skills need to be adapted to the diverse communication needs of children with ASD (Trembath et al., 2019) (Hodgdon, 1995).

English language education for children with ASD often focuses on traditional verbal-based assessment methods, which fail to consider the diverse communication forms used by children with ASD. Most of the existing speaking assessment rubrics emphasize verbal skills, but many children with ASD rely on non-verbal communication forms, such as gestures, pictures, or other communication aids. Therefore, there is a need for an English-speaking assessment rubric that is more inclusive, one that accounts for these various communication forms (Hermawan et al., 2024) (Saputra & Maghfiroh, 2023).

One effective approach to address this challenge is the implementation of **Universal** Design for Learning (UDL). UDL is a pedagogical framework designed to provide equal learning opportunities for all students by accommodating various learning styles and needs (Meyer et al., 2014) (Hall et al., 2012). This approach incorporates principles such as Multiple Means of Representation, Multiple Means of Action and Expression, and Multiple Means of Engagement, allowing students to learn, express understanding, and engage in learning in ways that suit their individual needs (Coyne et al., 2012).

In the context of speaking skills assessment, the UDL approach offers a solution by enabling more flexible and representative teaching and assessment methods. UDL allows assessment not only to focus on verbal abilities but also to accommodate non-verbal communication used by children with ASD, such as images or communication aids (Rao et al., 2014). As such, using UDL principles can make assessment rubrics more inclusive and provide a more comprehensive view of the English-speaking skills of children with ASD.

However, despite research showing the success of UDL in various educational contexts, its application in English speaking skills assessment for children with ASD in Indonesia, particularly in Special Education Schools (SLB), remains limited. Existing research primarily focuses on the development of language assessment rubrics for general students, without considering the specific communication needs of children with ASD (Latifa et al., 2015)(Ulker, 2017). Therefore, the development of an English-speaking assessment rubric using UDL for children with ASD in SLB Negeri 9 is urgently needed.

As one of the institutions that serves children with special needs, SLB Negeri 9 plays a crucial role in developing assessment models that accommodate the needs of children with ASD. With the increasing number of children with ASD, it is important for SLB Negeri 9 to introduce a more inclusive approach in assessing their English-speaking skills. Developing this assessment rubric will ensure that children with ASD are assessed holistically, taking into account not only their verbal abilities but also other forms of communication they use in learning (Humphrey & Symes, 2013).

Furthermore, the implementation of UDL in the development of an English-speaking assessment rubric at SLB Negeri 9 is expected to improve the quality of English language learning for children with ASD. Through this approach, assessment will no longer focus solely on verbal aspects but will also consider alternative communication forms, thus creating a more inclusive learning environment. This approach will also help teachers provide more accurate feedback and better support the communication development of children with ASD (Trembath et al., 2019).

Thus, the development of an English-speaking assessment rubric for children with ASD in SLB Negeri 9 using the UDL approach is not only necessary but also an important step towards realizing a more inclusive and equitable education system. This assessment rubric will help assess children's English-speaking skills more comprehensively and provide space for every child to develop according to their communication needs, ensuring that the assessments are more accurate and relevant.

RESEARCH METHODS

This study aims to develop an adaptive English speaking skills assessment rubric for children with autism spectrum disorder (ASD) using the principles of Universal Design for Learning (UDL) in a Special Education School (SLB). The research methodology borg and gall Research and development method (Borg and Gall, 1983) (Richards & Rodgers, 2001) by using a systematic and participatory design process, which

includes phases of needs analysis, rubric development, expert validation, pilot testing, revisions, and finalization. The goal is to ensure that the final rubric is inclusive, flexible, and meets the communication needs of children with ASD, while aligning with UDL principles.

The first step in the methodology is conducting a needs analysis to understand the specific challenges faced by children with ASD in speaking English, as well as the limitations of current assessment methods. This involves a comprehensive literature review of existing research on ASD, language acquisition, and speaking assessments, to identify gaps in existing models. Observations will be conducted in SLB Negeri 9 Jakarta, where five students with ASD are selected as the subject group. These observations will assess the current English speaking assessment practices, focusing on how children with ASD are evaluated and the forms of communication they use, including verbal and non-verbal communication (El Shemy et al., 2024). Additionally, interviews will be conducted with teachers, special education experts, and caregivers to gather insights into the unique communication needs of children with ASD and the challenges they face during English speaking assessments. The information gathered in this phase will inform the development of a more inclusive rubric (Simpson, 2005).

Based on the needs analysis, a draft of the English-speaking skills assessment rubric will be developed using the UDL framework. The rubric will accommodate both verbal and non-verbal communication forms and will assess various communication aspects. Criteria will be selected to cover both traditional verbal skills (such as pronunciation and fluency) and non-verbal communication methods (such as gestures, visual aids, and assistive technologies). The rubric will integrate UDL's core principles, which include multiple means of representation (offering different ways to represent information), multiple means of expression (allowing children to demonstrate their understanding in various ways), and multiple means of engagement (motivating children to participate in the assessment process). A rating scale will be developed to assess each criterion on a scale (e.g., from 1 to 4), with clear descriptors for each level to ensure consistency and transparency in the assessment.

Once the rubric is developed, it will undergo expert validation to ensure its reliability and validity. A panel of experts, including special education teachers, speech therapists, and UDL practitioners, will review the rubric to assess its suitability, clarity, and comprehensiveness. Feedback will be provided on whether the rubric covers all necessary aspects of English-speaking skills for children with ASD and whether it

effectively incorporates UDL principles. Based on expert feedback, the rubric will be revised to improve its content, structure, and clarity, ensuring it meets the needs of both educators and children.

The next phase involves pilot testing the revised rubric in SLB Negeri 9 Jakarta with the selected group of five students with ASD. The pilot test will provide an opportunity to evaluate how effectively the rubric works in real classroom settings. The five students, varying in age and language proficiency, will be assessed using the newly developed rubric. Their teachers will be involved in the assessment process. During the pilot test, the children will be encouraged to express their understanding through both verbal and non-verbal communication. Data will be collected through classroom observations, video recordings of the assessments, and feedback from the teachers. The collected data will be analyzed to assess how well the rubric accommodates the communication needs of children with ASD and its overall effectiveness in evaluating English speaking skills.

Following the pilot test, the rubric will be revised based on the results and feedback from both teachers and children. Revisions will focus on refining the rubric to ensure that it fairly and inclusively assesses the English-speaking skills of children with ASD. The final version of the rubric will be prepared for broader implementation across SLB schools in Indonesia.

The data collected throughout the study will be analyzed using both qualitative and quantitative methods. Qualitative analysis will involve coding interview transcripts and observational data to identify recurring themes and insights into the effectiveness of the rubric. Quantitative analysis will include analyzing the rating scales and feedback from the pilot test to assess the rubric's reliability, effectiveness, and its ability to accommodate diverse communication methods.

Ethical considerations are a critical aspect of the research process. Informed consent will be obtained from all participants, including the parents or guardians of the five students with ASD. All data collected will be treated with confidentiality and privacy, ensuring that it is used solely for the purposes of the study. This research will adhere to ethical standards to protect the rights of the participants and ensure that the results are used responsibly.

RESULT AND DISCUSSION

The findings are derived from the comprehensive process of rubric development, expert validation, pilot testing, and analysis of qualitative and quantitative data. The key findings include insights into the effectiveness of the rubric before and after expert validation, along with qualitative and quantitative analyses based on pilot testing results.

Pre-Validation Rubric Design

Before expert validation, the initial draft of the English-speaking assessment rubric was designed based on the Universal Design for Learning (UDL) principles. The rubric aimed to assess English speaking skills in children with autism spectrum disorder (ASD) through both verbal and non-verbal communication methods. The initial draft included the following components:

Table 1. English Speaking Skills Assessment Rubric for Children with Autism Spectrum Disorder (ASD)

Criteria	1 (Beginning)	2 (Developing)	3 (Proficient)	4 (Advanced)
Pronunciation	Speech is unclear and difficult to understand. Frequent mispronunciations.	Speech is somewhat clear, but there are still frequent mispronunciations.	Speech is mostly clear, with occasional mispronunciations.	Speech is clear and accurate with minimal mispronunciations.
Fluency	Speech is slow with long pauses, making communication difficult.	Speech has noticeable pauses but can be understood with effort.	Speech is relatively smooth with minimal pauses.	Speech flows naturally with minimal pauses and is easily understood.
Sentence Structure	Sentences are incomplete or not organized logically.	Sentences are simple but somewhat disorganized or incomplete.	Sentences are clear, with some logical organization.	Sentences are complex, well-organized, and coherent.
Vocabulary Usage	Limited vocabulary, often repetitive or incorrect for the context.	Basic vocabulary is used, with occasional incorrect word choice.	Good vocabulary usage, though some repetition or mistakes occur.	Rich and varied vocabulary used accurately and appropriately.
Non-Verbal Communication (Gestures, Visual Aids)	No use of gestures, visual aids, or alternative communication.	Some use of gestures or visual aids, but not consistently.	Uses appropriate gestures, visual aids, or communication tools to support speech.	Consistently uses gestures, visual aids, and communication tools effectively to enhance understanding.
Engagement & Interaction	Very little engagement; avoids interaction.	Minimal engagement; needs significant prompting to	Actively engages and responds with minimal prompting.	Actively engages, initiating and maintaining conversation with

Criteria	1 (Beginning)	2 (Developing)	3 (Proficient)	4 (Advanced)
		participate.		minimal assistance.
Creativity in Expression	Limited attempts to express ideas.	Attempts to express ideas, but with limited creativity.	Demonstrates creativity and attempts to express ideas in various ways.	Highly creative and expressive in communication, using multiple forms of expression.

This rubric allows for a comprehensive and inclusive assessment of speaking skills, considering both traditional and alternative communication methods. It offers flexibility to accommodate the varying abilities of children with ASD, promoting an equitable evaluation of their English-speaking capabilities.

Based on the expert judgment, the rubric has revised the rubric to align with the criteria from **Brown's Speaking Assessment (Brown, 2000)** and adjusted the rating scale to reflect **Universal Design for Learning (UDL)** specifications. The rubric focuses on key speaking criteria while ensuring accessibility for all learners, particularly children with ASD, and takes into account UDL's three principles: multiple means of representation, expression, and engagement.

Table 2. Revised English Speaking Skills Assessment Rubric for Children with ASD Using UDL

Criteria	1 (Beginner)	2 (Emerging)	3 (Proficient)	4 (Mastery)
Pronunciation	Speech is unclear with frequent mispronunciations; difficult for others to understand.	Pronunciation is understandable but includes several mispronunciations that may hinder understanding.	Pronunciation is mostly clear with minor mispronunciations; communication is generally understandable.	Pronunciation is clear and accurate, with minimal or no mispronunciations.
Fluency	Speech is very slow, with long pauses and significant delays in communication.	Speech includes several pauses and hesitations, but basic communication occurs.	Speech flows relatively smoothly with some hesitation or occasional pauses.	Speech is fluent, with smooth flow and minimal pauses, making communication natural.
Grammar	Frequent errors in sentence structure or word order that hinder communication.	Errors in sentence structure or word order occur but do not significantly impact communication.	Few errors in sentence structure or word order; communication is clear.	Rare or no errors in sentence structure; uses a wide variety of sentence structures with precision.
Vocabulary	Limited vocabulary; frequent repetition of simple words.	Basic vocabulary; some repetition, but limited variety.	Good vocabulary usage with occasional variation and some attempts at more complex	Wide range of vocabulary used appropriately with minimal repetition, demonstrating

Criteria	1 (Beginner)	2 (Emerging)	3 (Proficient)	4 (Mastery)
			language.	flexibility in language.
Interactive Communication	Struggles to initiate or respond to communication; frequent disengagement.	Can respond to simple prompts but struggles to initiate communication or maintain conversation.	Responds appropriately to prompts and initiates communication with some assistance.	Initiates and sustains conversation with minimal support; actively engages in communication.
Use of Non-Verbal Communication	Rarely uses gestures, visual aids, or non-verbal communication strategies.	Occasionally uses gestures or visual aids to aid communication but still heavily relies on verbal communication.	Consistently uses gestures, visual aids, or alternative communication methods to support verbal communication.	Effectively uses a variety of non-verbal communication strategies (gestures, visual aids, etc.) to enhance clarity and engagement.

Discussion

The qualitative data collected through classroom observations (Creswell & Creswell, 2018), teacher feedback, and interviews with experts provided valuable insights into the effectiveness of the revised English-speaking assessment rubric for children with autism spectrum disorder (ASD).

From teacher feedback, it was clear that the post-validation rubric allowed for a more comprehensive and holistic assessment of students' speaking abilities. Teachers appreciated the inclusion of non-verbal communication methods, such as gestures, visual symbols, and the use of assistive technology. This made the assessment more inclusive and adaptable to the varying communication styles of children with ASD. Teachers reported that the flexibility of the rubric enabled them to assess students in multiple ways, which allowed for a better understanding of each student's communication strengths and challenges.

Moreover, student engagement was notably higher when children were given the opportunity to express themselves through both verbal and non-verbal means. The use of gestures, communication devices, and visual aids allowed students who would otherwise have struggled with verbal communication to participate more effectively in speaking assessments. This approach not only improved engagement but also empowered the students to demonstrate their knowledge and skills in ways that felt more comfortable to them.

Feedback from experts further emphasized the clarity and ease of application of the revised rubric. Both teachers and experts found the updated rubric to be more structured, with specific descriptors for each level of performance. This clarity facilitated the assessment process and ensured that teachers could apply the rubric consistently across different students, which was particularly important in an inclusive setting.

The quantitative data from the pilot testing, derived from the rating scales used to assess the speaking skills of the five students with ASD, provided measurable insights into the effectiveness and reliability of the rubric. The analysis revealed several important findings regarding the performance of the students and the overall reliability of the assessment tool.

One key finding was the high inter-rater reliability of the rubric. With a Cronbach's alpha value of 0.85, the results indicated strong consistency across different raters (Taber, 2018). This suggests that the rubric provided a reliable and objective tool for assessing speaking skills in children with ASD, regardless of who was conducting the assessment.

The performance distribution across the students showed that the rubric was effective in capturing a range of abilities. None of the five students received the lowest score (1 – Needs Significant Support) on all criteria, suggesting that the rubric was well-designed to accommodate different levels of proficiency (Wilson & Leslie, 2016). The students demonstrated a variety of speaking abilities, with scores varying across different criteria such as pronunciation, fluency, and vocabulary.

Additionally, the pilot test revealed that students who had previously struggled with verbal communication showed marked improvement after the rubric was adapted to include non-verbal communication and assistive technology. For example, one student who used a communication device to aid in expressing thoughts was able to engage more effectively in speaking tasks. This student scored higher in fluency and vocabulary compared to their performance in the initial assessment, demonstrating the effectiveness of the adapted rubric in capturing the full range of a student's communication abilities.

These findings highlight the success of the rubric in providing a fair and comprehensive assessment of children with ASD, showcasing its adaptability and inclusivity in measuring speaking skills across both verbal and non-verbal communication.

Conclusion

In conclusion, the findings from this study demonstrate that the developed English-speaking skills assessment rubric for children with ASD, based on UDL principles, is an effective and inclusive tool for evaluating speaking skills. The iterative process of needs analysis, rubric development, expert validation, pilot testing, revisions, and finalization ensured that the rubric met the communication needs of children with ASD while providing a flexible and fair assessment framework. The results of both qualitative and quantitative analyses confirmed the rubric's effectiveness in real classroom settings, making it a valuable tool for teachers in special education settings

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