PAEDAGOGIA
Jurnal Penelitian Pendidikan
http://jurnal.uns.ac.id/paedagogia

DOI : 10.20961/Paedagogia.v29i1.109764
Vol. 29, No. 1, 2026, pp. 1-18
p-ISSN 0126-4109
e-ISSN 2549-6670

Designing an Authentic Assessment-Based Non-Test Evaluation Model for Assessing Cognitive and Social Growth of Children with Special Needs

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Keywords: *Authentic Assessment, Children with Special Needs, Cognitive, Non-Test Evaluation, Social*

Article history
Received: 17 October 2025
Revised: 19 February 2026
Accepted: 27 February 2026
Published: 28 February 2026

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DOI: 10.20961/paedagogia.v29i1.109764

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Abstract: Children with special needs face unique challenges in learning and assessment, and traditional test-based methods often fail to capture their full cognitive and social abilities. This research aims to design and validate a non-test evaluation model based on authentic assessment principles to measure the cognitive and social development of children with special needs. Using a Research and Development (R&D) approach guided by Richey and Klein's model, the study proceeded through three phases: model development, expert validation, and implementation. Data were collected through expert validation sheets and perception questionnaires involving teachers, therapists, and parents, analyzed both qualitatively and quantitatively. The validation results showed that the developed model achieved a "very valid" category across all indicators, demonstrating strong theoretical grounding, practical relevance, and contextual suitability. Respondent perceptions were predominantly positive, with 80% agreeing on the model's clarity, usefulness, and applicability in inclusive educational settings. The model effectively integrates real-life contexts and interdisciplinary collaboration, providing a holistic framework for assessing both cognitive and social growth. In conclusion, this authentic, non-test-based model offers a practical and inclusive alternative for evaluating children with special needs, bridging the gap between assessment theory and classroom practice.

How to cite: Machmud, M. T., Manjani, N., Setiawan, A., Mukhlisa, N., Zulfitrah, Pansri, O., Afifah, F. & Sitepu, A. T. (2026). Designing an Authentic Assessment-Based Non-Test Evaluation Model for Assessing Cognitive and Social Growth of Children with Special Needs. *PAEDAGOGIA*, *29*(1), 1-18. DOI: 10.20961/paedagogia.v29i1.109764

INTRODUCTION

The development of an evaluation model specifically designed for children with special needs is crucial, considering the distinctive challenges they encounter in both learning and assessment processes. Conventional test-based methods often fall short in representing the complexity of their abilities, learning patterns, and developmental progress. As a result, such assessments may fail to provide meaningful insights into the learners' strengths and areas requiring support, leading to missed opportunities for tailored educational interventions. Children with special needs typically exhibit diverse cognitive profiles, communication styles, and social behaviors that are not adequately captured through traditional standardized tests. Consequently, alternative evaluation approaches that reflect the heterogeneity of these learners are urgently required (Salpina & Putri, 2023; Fauzian et al., 2023).

Evaluating the learning outcomes of students with special needs presents multifaceted challenges that extend beyond the constraints of conventional assessments. One of the primary concerns is the scarcity of appropriate assessment instruments capable of accommodating individual differences in ability and limitation. Many existing tools remain overly focused on academic achievement while neglecting essential domains such as emotional regulation, social competence, and adaptive functioning—factors that are central to holistic child development (Saniatuzzulfa et al., 2023; Hutapea,

2024). Furthermore, the limited capacity of educators to design and implement non-traditional assessments contributes to an overreliance on standardized testing, which may distort the actual learning profiles of special needs students (Pillai & Devamanokari, 2023; Pratiwi et al., 2022). The complexity of these students' educational trajectories and the dynamic nature of their developmental progress further exacerbate the inadequacy of one-size-fits-all assessment practices (Setiawan et al., 2023; Huey & Nordin, 2023).

In response to these limitations, authentic assessment has gained recognition as a more comprehensive and contextually relevant alternative for evaluating the holistic development of children with special needs. This approach emphasizes meaningful, real-world tasks that allow learners to demonstrate their understanding through applied performance rather than abstract testing (Aleksanyan, 2023). Authentic assessment not only captures academic competencies but also provides a nuanced picture of students' social participation, emotional adjustment, and adaptive skills (Aleksanyan, 2023; Nurhayati et al., 2023). By situating assessment activities within realistic contexts, it enhances learner engagement, motivation, and self-efficacy which are becoming key components in fostering sustained growth and lifelong learning (Oz & Parlak, 2023; Saniatuzzulfa et al., 2023). Moreover, by valuing functional skills and individual progress, authentic assessment encourages inclusivity and recognizes each child's unique developmental pathway within the educational environment (Marwiyati, 2023). Authentic assessment and non-test evaluation are conceptually interconnected. Authentic assessment emphasizes meaningful, contextualized performance tasks that reflect real-life competencies (Aleksanyan, 2023), while non-test evaluation prioritizes observational, portfolio-based, and process-oriented measurement strategies (Choirudin et al, 2023; Winarno et al, 2019). In inclusive education, these two constructs converge in their shared rejection of standardized, decontextualized testing formats and their emphasis on developmental progression and learner variability. Therefore, non-test evaluation can be understood not merely as an alternative format, but as a structural embodiment of authentic assessment principles in measuring cognitive and social development holistically.

Building upon the growing recognition of authentic assessment as a holistic alternative to conventional evaluation methods, recent scholarly efforts have increasingly focused on developing comprehensive frameworks that operationalize these principles in the context of special needs education. Such developments reflect a paradigmatic shift from test-oriented assessment toward models that prioritize inclusivity, contextual relevance, and multidimensional growth. Researchers have sought to integrate cognitive, emotional, and social dimensions within evaluation systems to capture the complexity of learners' developmental trajectories more accurately. These initiatives underscore the urgent need for instruments that not only measure academic achievement but also represent the lived experiences and adaptive behaviors of children with special needs. Consequently, the emergence of diverse frameworks and tools marks a significant advancement in the pursuit of equitable and meaningful assessment practices.

Recent frameworks and instruments designed for assessing cognitive and social development among children with disabilities emphasize inclusivity and a holistic perspective. The Human Rights-Based Evaluation approach, for instance, highlights the importance of not only academic success but also the integration of social-emotional learning (SEL) into assessments (Johnstone et al., 2023). This approach considers the right to inclusive education as fundamental; hence, assessments are framed within this context. Instruments developed, such as observational measures and social-emotional competence scales, have gained traction and are favored by educators for their utility in providing a well-rounded view of student development (Thevarajah et al., 2022; Guss et al., 2023). The role of multisensory technology and alternative assessment frameworks is also notable in recent literature. For example, studies on multisensory technology indicate its effectiveness in enhancing cognitive rehabilitation processes and, therefore, its potential to comprehensively assess cognitive growth (Parisi et al., 2022). Furthermore, frameworks like the Curriculum Research Framework developed for STEM have been tailored to encompass children with disabilities, thus solidifying the relevance of non-traditional assessments in understanding and supporting the unique cognitive profiles of learners in these areas (Guss et al., 2023).

Despite the growing number of frameworks promoting inclusive and holistic assessment, existing models still lack a comprehensive mechanism that integrates authentic assessment principles within a

structured, non-test evaluation system specifically tailored for children with special needs (Khasawneh, 2024; Ulucinar & Dinc, 2021). Most current tools emphasize either cognitive or social aspects in isolation, thereby overlooking the interconnected nature of these developmental domains. Moreover, the practical implementation of authentic assessment in special education remains limited due to the absence of clear guidelines, measurable indicators, and contextual adaptability (Finkelstein et al., 2021; Lin & Lin, 2019). This fragmentation has created a significant gap between theoretical ideals and classroom practices, where educators often struggle to translate inclusive assessment principles into concrete, reliable instruments that reflect each child's individual progress and learning experience.

To address these limitations, the present study introduces an innovative non-test evaluation model grounded in authentic assessment principles to measure both cognitive and social development among children with special needs. The novelty of this research lies in its integrative design, which combines observational, performance-based, and contextual indicators into a unified framework that values each learner's unique developmental trajectory. To guide the investigation and ensure a systematic exploration of the proposed model, this study is directed by two key research questions. The first question seeks to identify how the non-test evaluation model can be effectively designed to measure the cognitive and social development of children with special needs. The second question focuses on examining the validity of the developed model to ensure that it accurately reflects the intended constructs and aligns with authentic assessment principles. These questions frame the study's effort to establish a robust, contextually grounded, and empirically tested evaluation framework that advances inclusive and holistic assessment practices.

METHOD

Research Design

This study employed a Mix-method enhanced by Research and Development (R&D) approach aimed at developing an authentic assessment-based non-test evaluation model tailored to the needs of children with special needs. The research followed the Richey and Klein development model, which consists of three primary phases: Model Development, Model Validation, and Model Use. The Model Development phase involved conducting a preliminary study to identify the needs, challenges, and existing gaps in evaluating the cognitive and social development of CSN. Based on these findings, a conceptual framework and prototype of the evaluation model were designed and refined through iterative expert input. The Model Validation phase included expert validation of content and construct aspects by specialists in educational evaluation and special needs education, followed by small-scale field testing to examine reliability, feasibility, and practicality. Finally, the Model Use phase focused on applying the developed model in real educational settings to assess its effectiveness in capturing the holistic cognitive and social development of children with special needs (Figure 1).

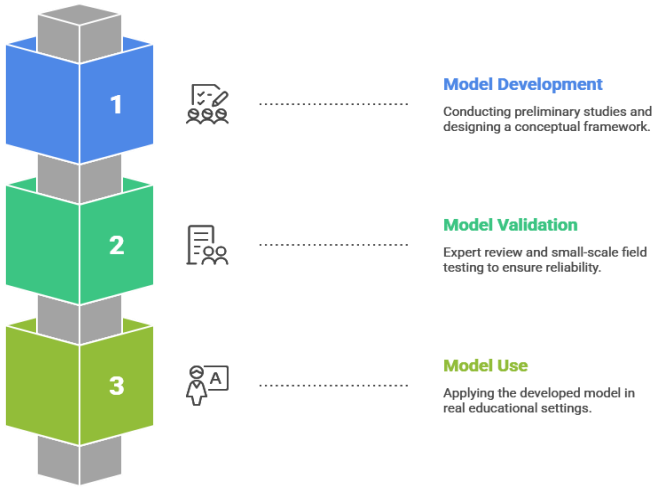

Figure 1. Diagrams of Research Stages

Data Collection

The research subjects consisted of two groups: expert validators and practitioner respondents. The expert validators included two specialists with academic and professional expertise in educational evaluation and special needs education, who were purposively selected to assess the content validity, construct alignment, and theoretical coherence of the developed non-test evaluation model during the Model Validation phase. In addition, 20 practitioner respondents comprising teachers, therapists, and parents who are directly involved in supporting children with special needs participated in the limited field testing during the Model Use phase. The respondents were selected using a purposive sampling technique based on specific criteria: (1) active involvement in educational or therapeutic services for children with special needs, (2) experience in conducting or participating in student assessment processes, and (3) willingness to provide structured feedback on the developed model. This sampling approach ensured that the data were obtained from individuals with relevant professional experience and contextual understanding of inclusive assessment practices.

Data Collection

Two primary instruments were utilized in data collection: (1) an expert validation sheet and (2) a perception questionnaire administered to teachers, therapists, and parents. The expert validation sheet was developed to assess the content validity, construct appropriateness, and conceptual coherence of the non-test assessment model. It consisted of eight items evaluating the suitability of the theoretical foundation, alignment with the needs of children with special needs, appropriateness of assessment techniques for cognitive and social abilities, accommodation of individual child profiles, application of a dynamic growth-oriented approach, use of observational methods, integration of real-life contexts, and inclusion of interdisciplinary collaboration. Each item was rated on a 4-point Likert scale (1 = not valid to 4 = very valid). Two expert validators independently reviewed and scored the model, and the final validity level was determined based on the average scores and consistency between validators.

The perception questionnaire was designed to evaluate the practicality, clarity, relevance, usefulness, and feasibility of the developed model during limited field testing. The instrument comprised four aspects: *(1) Design and Clarity, (2) Relevance and Suitability, (3) Usefulness, and (4) Applicability and Sustainability*, totaling thirteen statement items aligned with the components presented in Table 2. The questionnaire used a dichotomous response format (Positive/Negative) to capture respondents' perceptions regarding the ease of understanding, logical structure, adaptability, contribution to inclusive learning, and feasibility of implementation. The questionnaire was distributed after respondents reviewed the developed model, and the collected data were analyzed descriptively using percentage calculations to determine overall perception trends and identify areas requiring further refinement.

Data Analysis

Data were analyzed using a combination of quantitative and qualitative approaches to ensure comprehensive interpretation of the findings. Quantitative analysis employed descriptive statistics, including mean scores and percentage calculations, to determine the level of model validity and to summarize respondents' perceptions across assessed aspects. The validity level was categorized using a 4-point scale, in which an average score of 4 was interpreted as "very valid." Complementarily, qualitative data derived from expert suggestions and respondent feedback were examined through thematic interpretation to identify areas for refinement and to strengthen the conceptual and practical coherence of the developed model.

RESULT

Phase 1 Model Development: Design of a Non-Test Evaluation Model to Measure Cognitive and Social Development of Children with Special Needs

The non-test evaluation model for measuring cognitive development is based on five main principles of cognitive research itself, which include dynamic assessment, individualization, contextual relevance, emphasis on accuracy (validity and reliability), and comprehensiveness. These five principles are derived from theoretical reviews conducted prior to designing the assessment model. The proposed evaluation design consists of four main indicators grounded in these cognitive assessment principles. The indicators include: (1) optimizing cognitive assessment; (2) strengthening the accuracy of

assessment; (3) supporting the content of assessment; and (4) assessment based on relevant cognitive aspects (Figure 2). In the section on optimizing assessment, the process refers to two main principles, namely dynamic assessment which consists of three core elements used as the foundation for developing cognitive assessments for children with special needs: longitudinal observation, learning potential, and active participation. In addition, this indicator also incorporates the principle of test individualization, which emphasizes a holistic approach and child-centered focus. Each of these elements will later produce optimal assessment techniques. The second indicator, strengthening the accuracy of assessment, is based on the principles of validity and reliability. This principle involves three key elements to enhance the accuracy of assessment, namely: construct validity, content validity, and inter-rater reliability. Each of these elements is expected to support the precision and consistency of cognitive assessment results. The third indicator, supporting assessment content, is based on the principle of contextual relevance. This principle includes a main element, namely real-world content presentation, which aims to reflect authentic contexts and conditions during the assessment process. Finally, the fourth indicator, assessment based on relevant cognitive aspects, is grounded in the principle of comprehensiveness, consisting of the elements of multiple domains and contextual factors in order to specify the target cognitive abilities being assessed or measured.

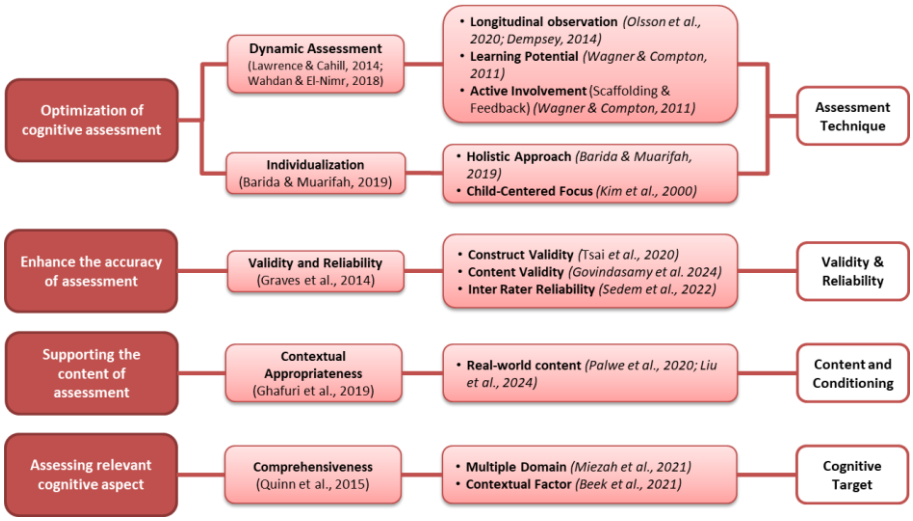

Figure 2. Non-Test Assessment Design for The Cognitive Assessment of Children with Special Needs

In the non-test evaluation model for measuring social development, four main principles form the foundation: direct observation and interaction, understanding of needs, collaboration, and environmental aspects. These principles are based on theoretical reviews conducted prior to designing the assessment itself. The proposed design for this evaluation includes three main indicators grounded in cognitive assessment principles. These indicators are: (1) Optimizing the assessment of social abilities; (2) Strengthening the accuracy of the evaluation; and (3) Supporting the assessment content (Figure 3). In the optimization aspect, the assessment refers to direct observation and interaction, which consist of three key elements used as the foundation for designing social ability evaluations for children with special needs. These elements include: habit indicators, direct interaction, and continuity (longitudinal). These elements are expected to produce an optimal assessment technique. The second indicator, strengthening the accuracy of the evaluation, is based on the principle of collaboration. This principle employs two main elements to enhance assessment accuracy: social involvement and interdisciplinary collaboration. Each of these elements is expected to support the consistency and precision of the social ability assessment. The final indicator, supporting assessment content, encompasses two main principles that is social environment and understanding of needs. The social environment principle includes key elements such as social context and cultural and linguistic sensitivity, while the understanding of needs principle emphasizes a holistic perspective. These elements are designed to provide the appropriate content and contextual conditioning within the assessment process.

Figure 3. Non-Test Assessment Design for The Social Assessment of Children with Special Needs

Phase 2 Model Validation: Validation of Designing Model

Based on the validation results conducted by two expert validators on the non-test assessment model design for evaluating the cognitive and social abilities of children with special needs, it was found that all indicators received high scores, with an overall average rating categorized as "very valid." Both validators gave consistent scores of 4 for each aspect (Table 1), indicating that the assessment model meets theoretical, practical, and contextual criteria. Overall, these results demonstrate that the developed assessment model possesses a high degree of conceptual coherence and implementation relevance within the context of inclusive education.

For the first to third aspects, both validators assessed that the theoretical foundation used in the model is strong and appropriate, and that the model accurately reflects the actual needs of children with special needs. They noted that the theoretical basis aligns with the principles of authentic assessment, differentiated learning, and child development theory. Furthermore, the model was considered relevant to the specific needs of children with special needs, as it presents suitable assessment techniques for evaluating social and cognitive abilities through a non-test approach. The consistency between the two validators' assessments on these aspects indicates the model's conceptual clarity and practical relevance.

For the fourth to sixth aspects, the validation results show that the model has been designed to be individualized, dynamic, and observation-based. Both validators agreed that the model can be adapted to the unique cognitive and social profiles of each child. The dynamic approach, which focuses on assessing a child's cognitive growth potential rather than static ability, was seen as providing a more comprehensive understanding of development compared to traditional assessments. Additionally, the observational methods employed in the model were deemed appropriate because they allow assessors to understand children's behaviors and responses in natural contexts, producing more authentic and meaningful results.

Finally, for the seventh and eighth aspects, both validators gave the highest ratings, as the model was considered to integrate real-life contexts and promote interdisciplinary collaboration. The model demonstrates the ability to link assessment results with children's social, family, and school environments, making it more applicable in real settings. Collaboration among professionals such as teachers, psychologists, and therapists was also seen as a major strength, as it provides a more comprehensive understanding of a child's development. Therefore, the validation results from the two validators indicate that the developed non-test assessment model has a very high level of content validity, both in terms of theoretical foundation, assessment technique, and practical relevance within inclusive educational settings.

Table 1. Validation Results of the Non-Test Assessment Design Model for Evaluating Cognitive and Social Abilities of Children with Special Needs by Expert Validators

No	Item	Score	
		Validator 1	Validator 2
1	The theory used is appropriate in the development of the assessment model.	4	4
2	The assessment model is aligned with the specific needs of the identified children with special needs.	4	4
3	The assessment model presents suitable assessment techniques for evaluating the social and cognitive abilities of children with special needs.	4	4
4	The assessment model is designed to accommodate the unique cognitive and social profiles of each child.	4	4
5	The assessment model employs a dynamic approach that evaluates the potential for children's cognitive growth rather than merely static abilities.	4	4
6	The assessment model uses observational methods to measure indicators of children's cognitive and social behavior.	4	4
7	The assessment model integrates and reflects children's real-life contexts to enhance the relevance of the results.	4	4
8	The assessment model includes collaboration among various disciplines to gain a more comprehensive understanding of children's needs.	4	4

Phase 2 Model Validation: Validation of Designing Model

The questionnaire analysis was conducted to evaluate respondents' perceptions of the developed non-test evaluation model in terms of its design, relevance, usefulness, and practicality (Table 2). This assessment aimed to determine the extent to which the model meets the criteria of clarity, applicability, and effectiveness in evaluating the cognitive and social development of children with special needs. The results provide valuable insights into the strengths and areas that require further improvement, ensuring that the model can be effectively implemented in inclusive educational settings.

The questionnaire results indicate that the design and clarity aspects of the non-test evaluation model received predominantly positive perceptions from respondents. A total of 80% agreed that the model is clearly presented, easy to understand, aligned with authentic assessment principles, and practical to use in evaluation activities. Meanwhile, 60% perceived the model components as systematically and logically structured, while 40% expressed reservations. Overall, these findings suggest that the model is well-designed and comprehensible, though the logical organization of its components may still require refinement to ensure greater coherence and usability in practical applications.

Furthermore, the results regarding the Relevance and Appropriateness aspect reveal a strong positive perception of the developed model. Eighty percent of respondents viewed the model as relevant for assessing the cognitive and social development of children with special needs, noting its adaptability to diverse learner characteristics and alignment with real needs in inclusive school contexts. However, the remaining 20% who expressed negative responses suggest that the model could be further refined to enhance its flexibility and contextual alignment across varied educational environments.

In addition, the Usefulness aspect also demonstrated a favorable response. The majority (80%) of respondents agreed that the model effectively helps teachers understand students' cognitive and social abilities, emphasizing its practical value in inclusive education. Meanwhile, 60% believed that it accurately represents students' social competencies, improves the quality of learning in inclusive classrooms, and serves as a viable alternative to conventional testing. Nonetheless, the 40% of respondents who were less convinced highlight the need for further refinement and teacher training to maximize the model's implementation and consistency across contexts.

Finally, regarding Practicality and Feasibility, most respondents perceived the model as practical and applicable across different educational levels, with 80% providing positive responses. This suggests that teachers find the model manageable to implement in various classroom contexts. However, only 60%

agreed that the model's application does not require hard-to-obtain resources, while 40% expressed concerns about its feasibility. Collectively, these results indicate that the model is viewed as user-friendly, adaptable, and relevant, though ongoing improvements are necessary to strengthen its coherence, practicality, and accessibility in diverse educational settings.

Table 2. Respondents' Perception of the Non-Test Evaluation Model

Assessed Response	Responses	
	Positive	Negative
Design and Clarity Aspect		
The non-test evaluation model is presented clearly and is easy to understand.	80%	20%
The components of the model are structured systematically and logically.	60%	40%
The model design components align with the principles of authentic assessment.	80%	20%
The instruments and indicators in the model are easy to use in evaluation practices.	80%	20%
Relevance and Suitability Aspect		
The model is relevant for measuring the cognitive and social development of children with special needs.	80%	20%
The model can be adapted to various characteristics of children with special needs.	80%	20%
The model design components reflect the real needs of inclusive schools.	80%	20%
Usefulness Aspect		
The model can help teachers better understand students' cognitive and social abilities.	80%	20%
The model can provide an accurate picture of students' social abilities.	60%	40%
The model design allows for improving the quality of learning in inclusive classrooms.	60%	40%
The model provides an effective alternative compared to conventional tests.	60%	40%
Applicability and Sustainability Aspect		
Based on the instrument implementing the developed model design components, it can be said that the model is easy to apply for teachers at various educational levels.	80%	20%
Based on the instrument implementing the developed model design components, the implementation of this model does not require resources that are difficult to obtain.	60%	40%

DISCUSSION

Phase 1 Model Development: Design of a Non-Test Evaluation Model to Measure Cognitive and Social Development of Children with Special Needs

1. Design of a Non-Test Evaluation Model for Cognitive Competencies

   According to several studies, the optimal principles of cognitive assessment for children with special needs emphasize that assessments should be comprehensive, meaningful, and tailored to each child's unique abilities. These principles include: (1) Individualization of assessment, which recognizes that every child has a distinct cognitive profile. By tailoring assessments to capture specific strengths and weaknesses, educators can design effective interventions that meet individual learning needs, minimizing the trial-and-error approaches often seen in educational settings (Barida & Muarifah, 2019); (2) Validity and reliability, which are crucial for children with special needs, as standardized assessments may be inappropriate due to potential bias stemming from cultural or developmental differences, leading to inaccuracies in instructional planning (Graves et al., 2014); (3) Comprehensiveness, meaning that cognitive assessment should encompass a broader range of

cognitive abilities beyond traditional intellectual capacity. Evaluations should consider emotional, social, and adaptive skills, acknowledging that cognitive development is multifaceted. This comprehensive approach ensures that all relevant areas contributing to the child's overall functioning are not overlooked (Quinn et al., 2015); (4) Contextual appropriateness, another vital principle, emphasizing that assessments should be conducted in environments that reflect the child's real-life situations to capture an authentic representation of their cognitive abilities and reduce anxiety (Ghafuri et al., 2019); and (5) Dynamic assessment, which focuses on the child's potential for cognitive growth rather than static ability, providing significant benefits for children with special needs. This approach promotes learning and development by identifying abilities and providing tailored support, aligning with contemporary methods of evaluating cognitive potential (Wahdan & El-Nimr, 2018). Overall, these principles highlight the importance of a thoughtful and individualized approach to cognitive assessment, ultimately enhancing educational practices and outcomes for children with special needs.

In analyzing cognitive assessment design for children with special needs, four main indicators must be considered: optimizing cognitive assessment, strengthening assessment accuracy, supporting assessment content, and assessment based on relevant cognitive aspects. First, optimizing cognitive assessment involves applying the principle of individualization in the evaluation process. Since each child has a unique cognitive profile, assessments must be adapted to capture their specific strengths and weaknesses. This is essential for facilitating effective intervention design and minimizing the trial-and-error approach often seen in education (Barida & Muarifah, 2019). Additionally, the use of dynamic assessment that focuses on the potential for cognitive growth rather than static abilities is highly beneficial in identifying capacities and providing tailored support (Wahdan & El-Nimr, 2018). Next, strengthening the accuracy of the assessment requires particular attention to the validity and reliability of the instruments used. Construct validity ensures that the tool truly measures the intended cognitive abilities, while content validity ensures that all relevant cognitive aspects for children with special needs are included in the assessment Graves et al., 2014; Govindasamy et al., 2024). Inter-rater reliability is also crucial to minimize discrepancies between evaluators, ensuring consistent and accurate data (Sedem et al., 2022). By ensuring accurate and reliable assessments, educators can make better-informed decisions in instructional planning.

Support for assessment content is another essential element in cognitive design. The assessment should include content relevant to the child's everyday life context, ensuring that the tasks reflect skills required in real-life situations (Palwe et al., 2020). This not only enhances assessment relevance but also reduces anxiety that children may experience during the evaluation process (Ghafuri et al., 2019). Therefore, it is crucial to align assessment tasks with daily activities to provide a more accurate picture of their cognitive abilities. Furthermore, assessments based on relevant cognitive aspects must consider multiple dimensions of child development, including emotional, social, and adaptive skills. A holistic approach ensures that no relevant areas contributing to the child's overall functioning are overlooked (Quinn et al., 2015). By integrating various domains of cognitive assessment and considering contextual factors affecting cognitive performance, assessments can provide a more comprehensive understanding of the child's needs and abilities. Thus, an effective cognitive design focuses not only on assessment outcomes but also on the processes that support the overall development and learning of children with special needs.

2. Design of a Non-Test Evaluation Model for Social Competencies

Assessment of social abilities in children with special needs is guided by several key principles emphasizing a holistic understanding of the individual, their environment, and the relationships shaping their social skills. A comprehensive approach is essential, considering the influence of family and community dynamics, the need for supportive interventions, and the importance of collaboration among stakeholders in the assessment process. One fundamental principle is the recognition of the child's social environment. As highlighted by Bhutto et al., the quality of life and social interaction of children with special needs are strongly influenced by the perceptions and experiences of their parents (Bhuto et al., 2023). These perceptions can significantly affect the child's social participation and overall family dynamics. Therefore, assessments must integrate an

understanding of family relationships and societal attitudes, as these factors can greatly impact the child's social engagement and overall well-being. Moreover, measuring social competence requires more than traditional assessment tools; it necessitates the inclusion of observational and direct interaction methods. Research shows that children's ability to interact with peers and adults can be effectively evaluated through their participation in various social settings. This approach allows for a deeper understanding of their social skills within real-life contexts.

An important aspect of recognizing the needs of children with special needs is ensuring that their social support systems are taken into account. Bhutto et al. (2023) discuss how parents of children with special needs often face limited social participation due to societal stigma and personal challenges. This underscores the importance of strengthening social networks that support both the child and their family. Without recognizing these needs, assessments may overlook critical factors contributing to the child's social integration and quality of life. Collaboration is also essential in the social assessment process. Involving teachers, parents, and trained professionals can significantly enrich the data collected and provide a more comprehensive view of the child's social abilities. Badawi & Suparno (2019) highlight the role of teachers not only as educators but also as key facilitators in developing the social skills of children with special needs in inclusive settings. Collaborative efforts between families and educational authorities help gather diverse perspectives on the child's needs, enabling more tailored intervention planning. Overall, effective social assessment for children with special needs must adopt a multifaceted approach that emphasizes environmental influences, utilizes observational and direct interaction methods, implements a collaborative framework, and acknowledges the need for targeted support. This comprehensive perspective not only aids in accurately identifying social abilities but also informs the development of appropriate interventions to enhance children's social participation and inclusion.

In analyzing the design of social ability assessments for children with special needs, three main indicators must be considered: optimizing social ability assessment, strengthening the accuracy of the assessment, and supporting assessment content. First, optimizing social ability assessment includes the use of observational and direct interaction methods. These methods emphasize the importance of observing children's social behaviors in real-life contexts, such as their ability to initiate social interactions, maintain conversations, and respond to peers (Velasco, 1996). The use of a longitudinal approach is also crucial, as it allows researchers to track the development of children's social abilities over time and adjust interventions based on their progress (Call et al., 2013; Widaman et al., 2010).

Next, strengthening the accuracy of the assessment requires attention to the validity and reliability of the tools used. Construct validity is essential to ensure that the instrument truly measures the intended social abilities (Tsai et al., 2022). Additionally, inter-rater reliability is important to minimize variations between evaluators, producing more consistent and accurate data (Sedem et al., 2022). By ensuring that assessments are accurate and reliable, educators can make better decisions in designing suitable interventions for children with special needs.

Support for assessment content is also a vital element in social ability assessment design. The assessment should include content relevant to the child's everyday life context so that the tasks reflect skills required in real-world situations (Palwe et al., 2020; Liu et al., 2024). This not only enhances the relevance of the assessment but also reduces anxiety that may occur during the process. Moreover, it is important to involve parents and communities in the assessment process, as they can provide valuable insights into the child's social behaviors and interactions (Barida & Muarifah, 2019).

Overall, an effective social ability assessment for children with special needs must adopt a multifaceted approach that emphasizes environmental influences, employs observational and direct interaction methods, and ensures collaboration among various stakeholders. The comprehensive assessment design not only helps accurately identify children's social abilities but also supports the development of appropriate interventions to enhance their social participation and inclusion in society.

Phase 2 Model Validation: Validation of Designing Model

This phase focuses on validating the design of the non-test assessment model through expert evaluation based on three key aspects: theoretical foundation and relevance to children with special needs, the dynamics and individualized assessment, and observational methods with real-life contexts. The validation aimed to ensure that the developed model is theoretically grounded, practically relevant, and contextually appropriate for assessing the cognitive and social abilities of children with special needs.

The validation results for the first to third aspects indicate that the theoretical foundation of the non-test assessment model is strong, appropriate, and effectively aligned with the actual needs of children with special needs. This finding is theoretically supported by developmental and cognitive learning frameworks that emphasize context-dependent and individualized approaches to assessment. As McCarty & Miller (2023) suggest through developmental systems theory, assessments should reflect the interactions between a child's developmental stage and their surrounding environment, underscoring the importance of context and interdependence in evaluating learning outcomes. Similarly, cognitive learning theories, such as the Cattell-Horn-Carroll model (Chia, 2025), reinforce the need to understand each child's cognitive profile, supporting the design of authentic and formative assessments that promote deeper thinking and skill application rather than rote memorization. The validators' agreement that the model reflects authentic assessment principles aligns with Papuda-Dolińska et al. (2023), who advocate for universally designed and equitable assessments that address diverse learner needs. Moreover, the relevance of the model to the specific needs of children with special needs resonates with the arguments of Oz & Parlak (2023) and Hutapea (2024), who highlight the importance of flexibility, inclusivity, and individualization in assessment design. Taken together, these theoretical perspectives substantiate the model's conceptual clarity and practical relevance, confirming that its foundation not only aligns with established educational theories but also effectively translates them into a meaningful and contextually responsive assessment framework for children with special needs.

The next indicator that validated is addressing the model that individualized, dynamic, and observation-based align strongly with the theoretical foundation of dynamic assessment and sociocultural theory. This theoretical perspective emphasizes that children's cognitive development is best understood through their capacity to learn and grow when provided with appropriate support, rather than through static measurements of ability. The model's dynamic nature reflects this principle by focusing on assessing children's cognitive growth potential and adaptability, consistent with findings by Pillai & Devamanokari (2023), who highlight that dynamic assessment reveals true learning capacities in children with special needs through interactive scaffolding and feedback. Similarly, Song et al. (2024) underscore that assessments incorporating real-time feedback and adaptive instructional strategies can identify individual strengths and challenges, leading to more targeted interventions. The observation-based design of the model also supports the authenticity of assessment results by situating evaluation within real-life and social contexts, allowing educators to interpret cognitive and social behaviors as they naturally occur. This approach resonates with the principles of personalized and responsive learning frameworks, such as the Dynamic Feedback-Driven Learning Optimization Framework (Song et al., 2024), which advocates continuous data-driven adaptation to each learner's profile. Hence, the validated model not only adheres to theoretical principles but also demonstrates practical alignment with contemporary research advocating dynamic, contextual, and individualized assessment approaches for children with special needs.

The findings of this study, particularly regarding the seventh and eighth aspects, highlight that the developed non-test assessment model successfully integrates real-life contexts and multidisciplinary collaboration, both of which are essential for achieving meaningful and valid evaluations of children with special needs. The validators' high ratings indicate that the model's strength lies in its ability to connect assessment results with the child's social, familial, and school environments, thereby enhancing its ecological validity. This aligns with Sedem et al. (2022), who demonstrated that systematic observational methods, such as the Teacher Impression Scale (TIS), effectively capture children's social play behaviors within inclusive settings. Similarly, Purwasih et al. (2024) emphasized that embedding assessments in natural contexts allows for a more accurate representation of children's cognitive and social functioning, as their development is strongly influenced by environmental interactions. Furthermore, Taqiyah et al. (2025) supported the use of real-life, performance-based tasks to reveal authentic skills that traditional

assessments often overlook. In addition, the incorporation of multidisciplinary collaboration, as described by Taqiyah et al. (2025) and Sousa et al. (2024), strengthens the assessment model by ensuring that teachers, psychologists, therapists, and parents contribute complementary perspectives. This collaborative framework not only enhances the reliability and comprehensiveness of assessment outcomes but also promotes the design of individualized educational interventions that are responsive to each child's holistic profile. Therefore, the current study's findings reinforce theoretical and empirical evidence that integrating ecological contexts and collaborative practices significantly improves the validity, relevance, and inclusivity of assessment models for children with special needs

Phase 3 Model Use: Data Perception on Design of a Non-Test Evaluation Model

The questionnaire results indicate the first aspect that is design and clarity aspects of the non-test evaluation model which received predominantly positive perceptions from respondents. A total of 80% agreed that the model is clearly presented, easy to understand, aligned with authentic assessment principles, and practical to use in evaluation activities. Meanwhile, 60% perceived the model components as systematically and logically structured, while 40% expressed reservations. These findings align with prior studies emphasizing that the usability and validity of non-test evaluation models are strongly influenced by clarity and systematic design principles (Hach et al., 2024; Sinabell & Ammenwerth, 2022). Clear and logically organized designs enhance teachers' ability to interpret and implement assessment tools effectively, which in turn strengthens the authenticity and educational relevance of assessment outcomes (Paudel, 2024). The positive responses in this study suggest that the model has successfully incorporated these essential design elements, allowing teachers to navigate the model easily and apply it meaningfully in diverse classroom contexts. However, the remaining concerns regarding the systematic arrangement of components indicate a need for further refinement to improve internal coherence and ensure that the model continues to support educators in carrying out authentic, process-oriented evaluations consistent with prior recommendations for structured and user-friendly assessment tools (Indriati et al., 2024).

The results regarding the Relevance and Appropriateness aspect reveal a strong positive perception of the developed model, with 80% of respondents viewing it as relevant for assessing the cognitive and social development of children with special needs. This finding aligns with previous studies emphasizing that non-test evaluation models are essential in addressing the diverse developmental characteristics and learning needs of such children. As noted by Tammemae et al. (2023), these models enable teachers to evaluate not only academic abilities but also social and emotional growth, fostering a more inclusive and holistic educational environment. Similarly, Khamzina et al. (2023) highlight that the adaptability and accommodation within non-test evaluations help ensure that each learner's unique abilities and challenges are recognized, supporting equitable learning opportunities. The high level of positive responses in this study indicates that the developed model has successfully embodied these principles by providing flexibility and relevance within inclusive school contexts. However, the 20% of respondents who perceived the model less favorably suggest that further refinement is needed to improve its contextual fit and responsiveness to varied educational environments, as emphasized by Muñoz-Oyarce et al. (2023), who argue that continuous adaptation and collaboration are central to maintaining the relevance of inclusive assessment practices.

The usefulness aspect of the developed non-test evaluation model received generally positive feedback, with 80% of respondents agreeing that it effectively helps teachers understand students' cognitive and social abilities, underscoring its practical value in inclusive education. This finding aligns with previous studies emphasizing that non-test evaluation models provide educators with a broader and more holistic understanding of students' development beyond what traditional tests can capture (Al-Sabbah et al., 2022; Mudau, 2022). Such models enable teachers to assess not only academic knowledge but also critical thinking, collaboration, and problem-solving skills, which are essential in inclusive settings where diversity in learning needs is pronounced. Consistent with Fraser et al. (2023), the teachers' favorable perceptions in this study suggest that authentic, non-test-based assessments can significantly enhance classroom practice by linking assessment activities to real-world applications, thus improving learning quality and student engagement. However, the 40% of respondents who expressed reservations point to the ongoing need for refinement and teacher training to ensure that the model's practical potential

is fully realized and applied consistently across diverse classroom contexts.

Finally, the findings on the practicality and feasibility aspect reveal that most respondents perceived the non-test evaluation model as practical and applicable across various educational levels, with 80% giving positive responses. This shows that teachers generally find the model manageable and adaptable within different classroom contexts. However, the concern expressed by 40% of respondents regarding feasibility highlights the importance of considering contextual constraints such as resource availability and institutional support. This aligns with previous research emphasizing that the long-term applicability and sustainability of non-test evaluation models depend on factors like institutional commitment, teacher training, and collaborative practices among professionals (El-Hamamsy et al., 2023; McGrew, 2023). Without sufficient administrative support, professional development, and collaborative engagement, even a well-designed model may face challenges in consistent implementation. Therefore, while the present findings indicate that the model is user-friendly and adaptable, ensuring its sustained use across diverse educational settings will require continuous institutional backing, regular capacity-building for educators, and ongoing refinement based on feedback and contextual needs.

In conclusion, the findings show that the developed non-test evaluation model is generally well-received by teachers. It is considered clear, relevant, useful, and practical for assessing the cognitive and social development of children with special needs. The model helps teachers apply authentic and inclusive assessments in various classroom settings. However, some concerns remain about its structure, adaptability, and resource requirements. Therefore, further improvements, ongoing teacher training, and institutional support are needed to ensure the model can be applied effectively and sustainably in diverse educational contexts.

Overall, the perception data show that teachers view the model as clear, relevant, useful, and feasible for classroom use. It effectively bridges theory and practice by helping educators assess students' cognitive and social abilities in real-world learning environments. However, some concerns related to systematic structure, contextual adaptability, and resource availability highlight the need for ongoing refinement. Sustaining the model's effectiveness will require consistent institutional support, teacher training, and collaborative engagement among stakeholders. Despite these challenges, the model represents a significant step toward promoting authentic, equitable, and meaningful assessment practices for children with special needs, fostering a more inclusive and developmentally responsive education system.

Research Advantages and Limitations

This study contributes to the advancement of inclusive assessment by proposing a structured non-test evaluation model that integrates cognitive and social domains within an authentic and contextual framework. Contemporary research emphasizes that inclusive assessment should move beyond standardized testing toward flexible, formative, and context-responsive approaches that capture students' developmental trajectories (Lin & Lin, 2019). The developed model aligns with recent perspectives on authentic and dynamic assessment, which highlight the importance of observing learning processes, contextual performance, and growth potential rather than static ability measures (Lewis & Cook, 2020). Furthermore, by incorporating interdisciplinary collaboration and real-life contextual indicators, the model reflects current inclusive education principles that advocate responsiveness to learner variability and ecological validity in assessment practices (Florian & Beaton, 2018). The involvement of teachers, therapists, and parents also strengthens the practical orientation of the model, as multi-stakeholder engagement has been identified as a key factor in effective inclusive implementation.

Nevertheless, several limitations should be acknowledged. Psychological expertise was primarily utilized during the initial structuring of the model framework, particularly in determining cognitive and social constructs, but was not extensively integrated throughout subsequent validation and implementation phases. As a result, deeper clinical interpretation of complex developmental patterns may not yet be fully represented in the current iteration of the model. Furthermore, the field implementation was conducted on a limited scale, focusing primarily on initial practicality and user perceptions rather than extensive multi-site application. Broader field trials across diverse inclusive school contexts are therefore needed to more comprehensively evaluate the model's practicality, adaptability, and sustainability. Future studies incorporating interdisciplinary expertise and wider implementation settings

would strengthen empirical support and enhance the robustness of the proposed assessment framework.

CONCLUSION

This study was conducted to address two main research questions concerning the design and validity of a non-test evaluation model for assessing the cognitive and social development of children with special needs. In response to the first research question, the findings demonstrate that an effective non-test evaluation model can be designed by integrating dynamic assessment principles, individualization, contextual relevance, and interdisciplinary collaboration within a structured framework. The developed model emphasizes longitudinal observation, authentic contexts, and holistic indicators that capture both cognitive and social dimensions, thereby addressing the limitations of conventional test-based assessments that often fail to reflect the complexity of children's developmental processes. This design provides a clearer and more practical pathway for educators to assess learning progress in inclusive settings in a manner that is responsive to individual needs and real-life learning situations.

The second research question, the validation results indicate that the developed model possesses a high level of validity and conceptual coherence. Expert validation confirmed that the model aligns with authentic assessment principles and accurately represents the intended cognitive and social constructs, while practitioner perceptions further support its clarity, relevance, and practical applicability. These findings suggest that the model is not only theoretically grounded but also feasible for implementation in educational practice, offering a reliable alternative to traditional assessment approaches for children with special needs. The involvement of multiple stakeholders strengthens the model's ecological validity and supports its use as a practical assessment tool in inclusive classrooms.

ACKNOWLEDGMENTS

We would like to express our sincere gratitude to LPPM Universitas Negeri Medan for their invaluable support and assistance in providing the necessary resources for this research. Their commitment to fostering academic excellence and research development has significantly contributed to the successful completion of this study. This research is part of a study financially supported by the Institute for Research and Community Service (LPPM) at Universitas Negeri Medan, under grant number 0078/UN33.8/PPKM/PD2025.

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http://jurnal.uns.ac.id/paedagogia

DOI : 10.20961/Paedagogia.v29i1.109764
Vol. 29, No. 1, 2026, pp. 1-18
p-ISSN 0126-4109
e-ISSN 2549-6670