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Designing HOTS-Based Assessment Instrument for Hindu Religious Education in Junior High School

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ABSTRAK

Rendahnya kemampuan berpikir kritis dan analitis siswa dalam memahami materi Pendidikan Agama Hindu menunjukkan perlunya pengembangan instrumen penilaian yang mampu mendorong keterampilan berpikir tingkat tinggi. Penelitian ini bertujuan untuk mengembangkan instrumen penilaian berbasis Higher Order Thinking Skills (HOTS) pada mata pelajaran Pendidikan Agama Hindu di kelas IX SMP, agar dapat meningkatkan kemampuan berpikir kritis dan analitis siswa dalam memahami materi tersebut. Penelitian ini menggunakan model ADDIE yang mencakup lima tahap, yaitu analisis, desain, pengembangan, implementasi, dan evaluasi. Subjek penelitian terdiri dari instrumen yang dikembangkan, dengan kelayakan instrumen sebagai objek penelitian. Pengumpulan data dilakukan dengan menggunakan kuesioner yang diisi oleh dosen pakar dan mahasiswa Pendidikan Agama Hindu. Hasil penelitian menunjukkan bahwa instrumen yang dikembangkan memiliki tingkat kelayakan yang sangat baik berdasarkan uji coba yang dilakukan oleh dosen dengan rata-rata persentase 88,8% dan 88,2%, yang keduanya masuk dalam kategori "Sangat Layak". Rata-rata skor uji coba respon siswa sebesar 87,4% menempatkan produk dalam kategori "Sangat Baik", sehingga dapat disimpulkan bahwa instrumen penilaian yang dikembangkan tidak hanya valid dan reliabel, tetapi juga efektif dalam mendorong kemampuan berpikir kritis dan keterlibatan kognitif siswa. Dengan menyelaraskan instrumen dengan kompetensi inti dan indikator HOTS, penelitian ini berkontribusi pada upaya peningkatan praktik pendidikan, khususnya dalam Pendidikan Agama Hindu.

ABSTRAK

The low level of critical and analytical thinking skills among students in understanding Hindu Religious Education materials indicates the need to develop an assessment instrument that fosters higher-order thinking skills (HOTS). This study aims to develop a HOTS-based assessment instrument for Hindu Religious Education in Grade IX of junior high school, with the goal of enhancing students' critical and analytical thinking abilities in comprehending the subject matter. The research employs the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The research subject comprises the developed instrument, with instrument feasibility as the research object. Data were collected using a questionnaire completed by expert lecturers and students of Hindu Religious Education. The results indicate that the developed instrument has a very high feasibility rating, based on trials conducted by lecturers with average percentages of 88.8% and 88.2%, respectively, falling into the "Very Feasible" category. The average score from the student response trial was 87.4%, placing the product within the "Very Good" category, which suggests its suitability for classroom use. It can be concluded that the developed assessment tool is not only valid and reliable but also effective in promoting critical thinking and cognitive engagement among students. By aligning the instrument with core competencies and HOTS indicators, this study contributes to ongoing efforts to improve educational practices, particularly in religious education.

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1. INTRODUCTION

Hindu Religious Education is an integral part of the Indonesian education curriculum, aiming to develop students' understanding and knowledge of Hindu teachings (Dewi, 2020; Pitriani, 2020). At the junior high school level, this subject not only focuses on character formation but also on fostering a deeper comprehension of Hindu religious values (Irawan, 2018; Widyana, 2018). To achieve these objectives, assessment methods must evaluate not only conceptual understanding but also higher-order thinking skills (HOTS) (Arifin & Retnawati, 2017; Johansson, 2020). Enhancing the quality of assessment aligns with the principles of the independent learning curriculum, which emphasizes flexibility, innovation, and student empowerment in the learning process. Higher-order thinking skills (HOTS) enable individuals to go beyond mere rote memorization and understand underlying meanings (Antara et al., 2020; Parmiti et al., 2022). This cognitive process involves analysis, synthesis, association, and inference, all of which are essential for generating creative and productive ideas (Johansson, 2020; Sumandya et al., 2020; Yurniwati & Soleh, 2020). The concept of HOTS in education is grounded in various learning theories, including problem-solving frameworks, Bloom's taxonomy, and instructional and assessment taxonomies (Erfianti et al., 2019; Rati et al., 2023). Based on these perspectives, HOTS can be understood as a cognitive process in which students engage beyond memorization, allowing them to develop innovative ideas through higher-level cognitive abilities. An initial observation conducted at SMP Negeri 3 Singaraja, one of the leading schools in Buleleng Regency, revealed that assessment instruments in Hindu Religious Education at the junior high school level have not yet fully explored students' potential in terms of HOTS. Most of the assessment tools remain conventional and are insufficient in capturing students' ability to apply Hindu religious concepts in real-life contexts.

The development of higher-order thinking skills (HOTS)-based assessment instruments in Hindu Religious Education at the junior high school level is essential to ensure that students not only acquire conceptual knowledge but also develop critical, analytical, and problem-solving abilities. Traditional assessment methods, which primarily focus on rote memorization, fail to capture students' capacity to apply Hindu religious teachings in real-life contexts. Given the emphasis of the independent learning curriculum on flexibility, innovation, and student empowerment, HOTS-based assessments play a crucial role in fostering deeper comprehension and cognitive engagement (Mulianti et al., 2016; Rahmawati et al., 2020; Rivaldo et al., 2022). By incorporating tasks that require analysis, synthesis, and evaluation, these instruments can enhance students' ability to internalize Hindu values while developing critical thinking skills necessary for navigating complex societal challenges. Therefore, reforming assessment strategies to align with HOTS principles is imperative for improving the quality and effectiveness of Hindu Religious Education at the junior high school level.

Previous research on the integration of higher-order thinking skills (HOTS) in educational assessment has highlighted the importance of shifting from traditional, memorization-based evaluations to more analytical and application-oriented assessments (Antara et al., 2020; Budiman & Jailani, 2014). Studies have demonstrated that HOTS-based assessment instruments significantly enhance students' critical thinking, problem-solving, and conceptual understanding across various subjects (Erfianti et al., 2019; Sa'adah et al., 2021). Research in Hindu Religious Education has specifically emphasized the need for assessment models that not only measure students' knowledge of religious concepts but also their ability to interpret, analyze, and apply these teachings in contemporary social and ethical contexts. Additionally, studies on curriculum innovation within the independent learning framework have underscored the role of flexible and student-centered assessment strategies in fostering cognitive development (Grant, 2018; Kazi et al., 2019). However, despite these advancements, research indicates that many assessment practices in religious education at the junior high school level remain conventional and insufficiently aligned with HOTS principles. This gap highlights the need for further empirical studies to develop and validate effective HOTS-based assessment instruments tailored to Hindu Religious Education.

This study offers a novel contribution by developing a higher-order thinking skills (HOTS)-based assessment instrument specifically designed for Hindu Religious Education in Grade IX at SMP Negeri 3 Singaraja. While previous research has emphasized the importance of HOTS in various educational contexts, limited studies have focused on its implementation within religious education, particularly in assessing students' ability to analyze, synthesize, and apply Hindu teachings in real-life situations. This study aims to bridge that gap by creating a comprehensive and contextually relevant assessment tool that aligns with the principles of the independent learning curriculum. The primary objective is to enhance students' cognitive abilities beyond rote memorization, fostering critical thinking, problem-solving, and a deeper understanding of Hindu religious values. Through the development and validation of this instrument, the study seeks to improve the quality of assessment in Hindu Religious Education, ultimately supporting students' intellectual and ethical growth in alignment with 21st-century learning demands.

2. METHOD

This study falls under the category of development research (Sugiyono, 2014). Development research aims to create or refine a product that addresses practical needs in the field, in this case, a higher-order thinking skills (HOTS)-based assessment instrument for Hindu Religious Education. Development research is a type of study designed to develop a product or system that can be applied in practical settings. The research design follows the ADDIE model, which consists of five phases: Analysis, Design, Development, Implementation, and Evaluation (Branch, 2009; Tegeh & Kirna, 2010). This study was conducted at SMP Negeri 3 Singaraja with Grade IX students as the primary participants. The subjects of this research included university lecturers specializing in Hindu Religious Education, Hindu religion teachers at SMP Negeri 3 Singaraja, and Grade IX students. These participants were selected to provide diverse perspectives on the effectiveness and applicability of the developed assessment instrument. The involvement of multiple stakeholders ensures a comprehensive evaluation, incorporating both academic and practical insights.

The research employed various instruments to facilitate systematic and accurate data collection. Research instruments are tools and facilities used by researchers to simplify the data collection process, ensuring precision, completeness, and consistency. In this study, questionnaires were used as the primary data collection instrument to assess the quality of the HOTS-based assessment instrument. The questionnaires were distributed to students, Hindu Religious Education lecturers, subject matter experts, and language experts to gather feedback on the content validity, clarity, and effectiveness of the assessment tool. The collected data were analyzed using descriptive analysis techniques following the research procedures established by the researcher. The analysis included both qualitative and quantitative data. Qualitative data consisted of expert reviews, lecturer feedback, and student responses, which were summarized to refine and improve the developed assessment instrument. Quantitative data were obtained from questionnaire responses using a rating scale and were analyzed statistically to measure the quality of the instrument. The evaluation criteria were based on a scoring system that categorized the instrument's feasibility from Highly Feasible to Not Feasible as shown in Table 1.

Table 1. Evaluation Criteria

No	Score	Criteria
1.	81.25 %< X ≤100 %	Highly Feasible
2.	62.50 %< X ≤81.25 %	Feasible
3.	43.75 %< X ≤62.50 %	Less Feasible
4.	25.00 %< X ≤43.75 %	Not Feasible
5.	0 %< X ≤25.00 %	Highly Not Feasible

Additionally, student responses were analyzed using a percentage formula to determine their perceptions of the assessment instrument. The interpretation of student responses was classified into categories ranging from Very Poor to Very Good as presented in Table 2. The findings from both qualitative and quantitative analyses were used to enhance the validity and reliability of the developed HOTS-based assessment instrument.

Table 2. Response Classification Categories

No	Score	Criteria
1.	0 % < X ≤ 20 %	Very Poor
2.	21 % < X ≤ 40 %	Poor
3.	41 % < X ≤ 60 %	Fair
4.	61 % < X ≤ 80 %	Good
5.	81 % < X ≤ 100 %	Very Good

3. RESULT AND DISCUSSION

Results

The first stage in developing the assessment instrument involves creating the instrument matrix, as shown in Table 3. This step is crucial for ensuring that the assessment aligns with the basic competencies and the required Higher-Order Thinking Skills (HOTS). The matrix maps each basic competency to specific HOTS indicators, linking them to relevant question formats such as multiple-choice and essay questions.

Table 3. Instrument Matrix for HOTS-Based Assessment

Basic Competency	HOTS Indicator	Question Numbers	Question Type
Understanding the Omnipotence *of Sang Hyang Widhi* as *Asta Aiswarya*	Explaining the concept of the omnipotence of *Ida Sang Hyang Widhi* as *Asta Aiswarya* (C4)	1,2	Multiple Choice
	Evaluating behavior in alignment with the omnipotence of *Ida Sang Hyang Widhi Wasa* as *Asta Aiswarya* (C5)	3,4	Essay
	Designing the implementation of the omnipotence of *Ida Sang Hyang Widhi Wasa* as *Asta Aiswarya* (C6)	5	Essay
Analyzing the Components of *Asta Aiswarya*	Categorizing the components of *Asta Aiswarya* (C5)	3,4	Multiple Choice
	Analyzing the qualities of *Asta Aiswarya* (C4)	1,2	Essay
Implementing Behavior Aligned with the Omnipotence of God as *Asta Aiswarya*	Assessing daily behavior as an implementation of *Asta Aiswarya* teachings (C5)	5	Multiple Choice
	Creating a story as a form of implementing *Asta Aiswarya* teachings (C6)	5	Essay

The trial data for the HOTS-based assessment instrument in the Hindu Religious Education subject for Grade IX was evaluated by two expert lecturers. The primary objective of this evaluation was to determine the validity and feasibility of the developed assessment instrument. The responses from these expert lecturers provided insights into the effectiveness of the test items in measuring students' higher-order thinking skills (HOTS). The results of the trial conducted by Expert Lecturer 1 and 2 are presented in Table 4.

Table 4. Evaluation Results from Expert Lecturers

No	Aspect	Expert Lecturer 1		Expert Lecturer 2	
		Feasibility Percentage	Feasibility Level	Feasibility Percentage	Feasibility Level
1.	Alignment with Learning Objectives (KD)	85 %	Very Feasible	90 %	Very Feasible
2.	Relevance to the Subject Matter	90 %	Very Feasible	90 %	Very Feasible
3.	Ability to Measure Higher-Order Thinking	87 %	Very Feasible	87 %	Very Feasible
4.	Variety of Question Formats	90 %	Very Feasible	90 %	Very Feasible
5.	Clarity and Accuracy of Language	95 %	Very Feasible	90 %	Very Feasible
6	Diversity of Perspectives	90%	Very Feasible	85%	Very Feasible
7	Accuracy of Answer Keys and Assessment Rubrics	85%	Very Feasible	85%	Very Feasible
	Average Score	**88.8 %**	**Very Feasible**	**88.2%**	**Very Feasible**

Based on Table 4, the evaluation results from both expert lecturers confirm that the HOTS-based assessment instrument for the Hindu Religious Education subject in Grade IX is highly valid and feasible for implementation. The average feasibility ratings from the two lecturers were 88.8% and 88.2%, respectively, both falling into the "Very Feasible" category. The high scores across all aspects indicate that the assessment instrument is well-aligned with learning objectives, effectively measures higher-order thinking skills, provides sufficient variation in question formats, and maintains clarity in language and accuracy in scoring rubrics. The data from the student trials were obtained through a response questionnaire administered to 15 sixth-semester students in the Hindu Religious Education program. The purpose of the questionnaire was to gather student feedback on the product developed by the researcher, which was aimed at being used as a reference in the learning process. The results of the limited student trials on the developed instructional

material showed an average feasibility score of 87.4%, indicating that the product was deemed "Very Good" for use. The detailed results of the student trials are presented Table 5.

Table 5. Results of Student Response Trials

No	Aspect	Feasibility Percentage	Criteria
1.	Alignment with Learning Objectives (KD)	87 %	Very Good
2.	Relevance to the Subject Matter	88%	Very Good
3.	Ability to Measure Higher-Order Thinking	88 %	Very Good
4.	Variety of Question Formats	90 %	Very Good
5.	Clarity and Accuracy of Language	89 %	Very Good
6	Diversity of Perspectives	85%	Very Good
7	Accuracy of Answer Keys and Assessment Rubrics	85%	Very Good
Average Score		**87.4 %**	**Very Good**

The student feedback results indicate that the developed HOTS-based assessment instrument is highly feasible and well-received by students. The average feasibility score of 87.4% places the product within the "Very Good " category, suggesting that it is suitable for use in the classroom. The evaluation also reveals that the instrument is adequately aligned with the learning objectives, provides clear and accurate language, offers a good variety of question formats, and can effectively measure higher-order thinking. The slight variance in feedback indicates areas for potential refinement. However, these scores still place the product in the "Very Good" category, confirming its overall readiness for educational application. The results of these student trials are instrumental in confirming the instrument's effectiveness and relevance for enhancing the learning experience in Hindu Religious Education at the Grade IX level.

Discussion

The main findings of this study indicate that the developed Higher-Order Thinking Skills (HOTS) assessment instrument for Hindu Religious Education in Grade IX at SMP N 3 Singaraja is highly valid and suitable for classroom application. The feedback from expert reviewers, including lecturers and material experts, suggests that the instrument is well-aligned with the curriculum's core competencies and content, ensuring its relevance and applicability in the educational context. Both the material and language experts, along with the teaching staff, provided positive evaluations, particularly regarding the clarity of the questions, the accuracy of the key answers, and the overall coherence of the instrument. Additionally, students who participated in the trial phase rated the instrument highly, indicating that it is easy to understand and effectively challenges their higher-order cognitive skills. The instrument's ability to assess critical thinking, problem-solving, and analysis reflects its value in enhancing student engagement and cognitive development (Chong et al., 2016; Fung & Liang, 2019; Muna et al., 2017).

Furthermore, the results underscore the instrument's potential to meet the current needs of educational assessment in the context of religious education. The alignment with HOTS indicators further demonstrates its utility in promoting deeper learning and student comprehension. This reinforces the notion that HOTS-based assessments are essential for developing well-rounded individuals capable of higher-level reasoning (Erfianti et al., 2019; Umami et al., 2021). The assessment's ability to engage students in complex cognitive processes signals a shift toward more effective and progressive teaching methods in schools. These findings validate the importance of creating assessments that move beyond rote memorization, supporting a shift toward assessments that foster critical thinking and cognitive engagement in students.

This research aligns with and further contributes to the growing body of literature on HOTS-based assessments. Previous studies have emphasized the importance of assessing higher-order cognitive processes to encourage deeper learning among students (Hanifah, 2019; Masitoh & Aedi, 2020; Preus, 2012; Sutarto & Jaedun, 2018). This study echoes such findings, showing that integrating HOTS into assessment tools significantly enhances the quality of education, especially in subjects like religious studies. Previous research has explored various methods for promoting critical thinking in students (Hart et al., 2021; Pu et al., 2019; Sejati et al., 2021), but this study offers a practical example of how these methods can be applied in a specific context, demonstrating the feasibility and effectiveness of HOTS assessments in religious education. This research addresses gaps in earlier studies, where the integration of HOTS in educational assessments, particularly in religious education, was underexplored. While many studies have investigated HOTS in general education, there has been limited focus on how such assessments can be adapted for religious studies. This study contributes to the growing understanding of how cognitive development

theories can be integrated into curriculum design, providing a tailored approach that respects both academic standards and the unique content of religious education.

The implications of these findings are significant for the future development of educational assessments in both the context of religious education and the broader educational field. This research underscores the importance of adapting assessment tools to foster cognitive growth, particularly in promoting higher-order thinking in students. By providing a reliable and valid instrument for assessing HOTS, the study contributes to the ongoing efforts to enhance the quality of education. Furthermore, it provides an example of how HOTS can be effectively integrated into subject-specific assessments, showing that it is possible to develop rigorous, content-specific instruments that also promote critical thinking and problem-solving abilities. This finding is particularly relevant for educators seeking to create assessments that are not only valid and reliable but also capable of encouraging students to engage deeply with the material and develop essential cognitive skills.

The research contributes to the theoretical understanding of curriculum development and educational psychology. The development of this assessment tool offers a concrete example of how cognitive development theories can be translated into practical applications in curriculum design. It also demonstrates the potential of HOTS assessments to influence both teaching practices and student learning outcomes. The research serves as a foundation for future studies exploring the integration of HOTS in various educational contexts, providing a model for how to assess and foster higher-order cognitive skills across diverse subject areas. As such, the findings of this study not only enhance the field of religious education but also contribute to the broader discourse on improving educational assessment practices globally.

4. CONCLUSION

This study demonstrates the significant potential of integrating Higher-Order Thinking Skills (HOTS) into the development of educational assessment instruments, specifically within the context of Hindu Religious Education for Grade IX. The findings affirm that the developed assessment tool is not only valid and reliable but also effective in promoting critical thinking and cognitive engagement among students. By aligning the instrument with core competencies and HOTS indicators, this research contributes to the ongoing efforts in refining educational practices, particularly in religious education. Furthermore, the study provides a valuable model for the design and implementation of assessments that encourage deeper learning, foster higher-level cognitive skills, and ensure the relevance of educational content to contemporary teaching needs. The implications of this research extend beyond the immediate context, offering insights into how educational assessments can be adapted to meet the evolving demands of 21st-century learning.

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