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Development Of A Learning Assesment Model For Pancasila Education Based On Marzano's Taxonomy

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Abstract
This study aimed to develop and evaluate a Marzano's Taxonomy–based assessment model for Pancasila Education that measures students' cognitive, metacognitive, and self-system competencies. The model was needed because existing assessments under the Merdeka Curriculum predominantly measured retrieval and comprehension, while higher-order thinking, self-reflection, and character-related dimensions remained insufficiently assessed. This Research and Development study employed a modified 3D model comprising Define, Design, and Develop stages. It was conducted at SMA YP Unila, Bandar Lampung, during the 2025/2026 academic year. The needs analysis involved two Pancasila Education teachers and 60 tenth-grade students. Three experts validated the developed product, followed by a limited trial involving 30 students and a field trial involving 60 students. Data were collected through interviews, needs-analysis questionnaires, validation sheets, teacher and student response questionnaires, and documentation. Qualitative data were analyzed interactively, while quantitative data were analyzed descriptively using percentages. The results showed that 80.00% of existing assessment items measured retrieval and comprehension, whereas metacognitive and self-system levels were not represented. The developed model comprised 30 items distributed across six Marzano levels and was supported by a guidebook, test and non-test instruments, rubrics, and scoring guidelines. Expert validation reached 93.42%, teacher practicality reached 92.75%, student practicality reached 92.00%, and overall feasibility reached 92.72%. These findings indicate that the model provides a more comprehensive assessment alternative for critical thinking, decision-making, self-reflection, and the internalization of Pancasila values. The study was limited to one school and did not test learning effects; future research should examine its effectiveness across diverse educational settings.

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Introduction

Education is a strategic tool for developing human resources with critical thinking skills, strong character, and competencies aligned with the demands of the modern era. As we enter the era of the Fourth Industrial Revolution and Society 5.0, the education system is no longer focused solely on the acquisition of knowledge but is also directed toward the development of higher-order thinking skills, problem-solving, creativity, collaboration, and the ability to make responsible decisions. This situation demands that educational institutions develop learning processes capable of facilitating students in building complex thinking skills and 21st-century skills relevant to the needs of both social life and the workplace (Hasan, 2024; Suryadi, 2020). In line with this, the assessment system is also required to undergo a transformation so that it not only measures learning outcomes at the basic knowledge level but is also capable of evaluating the thinking process, self-reflection, and students' ability to apply knowledge to solve various contextual problems (Irvine, 2020; W. K. Sari &

Nada, 2022). These conditions demand a shift in the learning and assessment paradigm capable of comprehensively measuring students' learning achievements.

This shift in the educational paradigm aligns with the implementation of the Merdeka Curriculum, which places students at the center of the learning process. The Merdeka Curriculum is designed to develop competencies, character, and the Pancasila Student Profile through meaningful, contextual, and student-centered learning experiences. The focus of learning is no longer limited to achieving content objectives but also on developing the critical, creative, collaborative, and reflective thinking skills required for 21st-century life (Adi et al., 2025). Consequently, the assessment system must be adjusted to align with these more comprehensive learning objectives. Assessment is no longer merely positioned as a tool to measure learning outcomes at the end of the learning process, but rather as an integral part that serves to identify the continuous development of students' knowledge, skills, attitudes, and character (Darmawan, 2024; Najah, 2025). High-quality assessment provides accurate information regarding students' learning achievements, which can then be used as a basis for making instructional decisions, providing feedback, refining teaching strategies, and fostering the continuous development of students' competencies (Retnoningsih, 2020).

From a modern learning perspective, assessment serves not only to determine what students have learned, but also to understand how they think, solve problems, reflect on their learning experiences, and internalize the values they have learned (Irvine, 2020). Therefore, the development of an assessment model capable of measuring cognitive, metacognitive, and affective dimensions in an integrated manner has become an increasingly urgent need in the implementation of the Merdeka Curriculum.

From the perspective of modern civic education, the success of learning is measured not only by mastery of civic concepts (civic knowledge), but also by students' ability to develop civic skills and civic dispositions, which are reflected in their attitudes, behaviors, and active participation in democratic life (Abdelhakim & Idoughi, 2021; Vanevenhoven & Liguori, 2013). These conditions indicate that Pancasila Education bears a broader responsibility. to prepare students to become citizens who not only understand national values conceptually but are also capable of implementing them in a social life that is increasingly dynamic and pluralistic (Lozano et al., 2021).

Pancasila education aims not only to equip students with a conceptual understanding of citizenship but also to foster critical thinking skills, decision-making based on Pancasila values, and the implementation of civic character in daily life (Sutrisno & Asmaroini, 2026). Achieving these goals requires an assessment system capable of measuring cognitive, affective, and skill-based aspects in an integrated manner. In reality, current assessment practices tend to focus on mastery of subject matter and low-level cognitive skills, such as recalling and understanding concepts. Consequently, students' abilities in analysis, evaluation, problem-solving, and character development have not been optimally measured. Retnoningsih (2020) emphasizes that the development of assessment that integrates knowledge, skills, and attitudes remains a major challenge in Citizenship Education.

This situation indicates a gap between the learning objectives of Pancasila Education and the evaluation system implemented in schools. While instruction is aimed at fostering students who are critical, reflective, and responsible, the assessment tools used still largely focus on the ability to reproduce knowledge. As a result, the information obtained from assessment results has not been able to fully reflect the development of students' competencies. Teachers struggle to identify

students' higher-order thinking skills, self-reflection abilities, and the extent to which they have internalized the values of Pancasila.

This phenomenon was also observed in Pancasila Education classes at YP Unila High School in Bandar Lampung. Based on the results of preliminary observations and a needs analysis conducted by the researcher, it was found that the learning process had shifted toward the implementation of the Merdeka Curriculum, which emphasizes student-centered learning activities such as group discussions, presentations, problem-solving, case studies, and reflective learning activities. Teachers strive to connect learning materials with social phenomena occurring in the students' environment to make learning more contextual and meaningful. Although the learning process has demonstrated characteristics of active learning, the assessment system used is still dominated by conventional written tests. Assessment instruments primarily measure the ability to understand the material and have not yet fully accommodated the higher-order thinking skills required by the Merdeka Curriculum. The questions used are still limited to conceptual knowledge and do not sufficiently assess students' ability to analyze civic issues, apply knowledge to solve problems, reflect on decisions made, or demonstrate commitment to the values of Pancasila in daily life.

Interviews with Pancasila Education teachers also revealed that developing assessment instruments capable of measuring students' higher-order thinking skills and character remains a significant challenge. Teachers face difficulties in designing assessment indicators that can simultaneously reflect the achievement of cognitive, metacognitive, and affective aspects. The available instruments generally still rely on traditional assessment models focused on final learning outcomes, while current educational needs demand assessments capable of revealing students' thinking processes in greater depth. These issues highlight the need to develop a more comprehensive assessment model suited to the characteristics of Pancasila Education. The developed assessment model must be able to measure various dimensions of students' abilities, ranging from understanding concepts, analyzing problems, applying knowledge in decision-making, reflecting on the learning process, to fostering self-awareness as responsible citizens. This need is becoming increasingly important because the success of Pancasila Education is determined not only by the level of mastery of the material but also by students' ability to apply Pancasila values in real life.

The approach deemed relevant to address these needs is Marzano's Taxonomy. Marzano's Taxonomy was developed by Robert J. Marzano and John S. Kendall as an improvement upon previous learning taxonomies by integrating cognitive, metacognitive, and affective aspects into a single conceptual framework. Unlike taxonomies that focus solely on levels of thinking skills, the Marzano Taxonomy views the learning process as an interaction between the cognitive system, the metacognitive system, and the self-system, all of which influence one another (Irvine, 2020). In Marzano's Taxonomy, the learning process is not only about how students acquire and apply knowledge but also how they monitor their own thinking processes, as well as how motivation, values, and self-perception influence their engagement in learning. This framework is highly relevant to the characteristics of Pancasila Education, which emphasizes not only civic knowledge but also the development of attitudes, values, and national character.

The strength of Marzano's Taxonomy lies in its ability to identify various levels of thinking processes, including retrieval, comprehension, analysis, knowledge utilization, metacognitive systems, and self-systems. This taxonomic structure not only focuses on cognitive dimensions but

also integrates metacognitive and self-awareness aspects that influence students' learning success (Irvine, 2020). Through this framework, teachers can develop assessment instruments that not only measure the ability to recall and understand material but also the ability to analyze problems, solve problems, make decisions, reflect on learning experiences, and internalize the values learned in daily life (D. E. Sari, 2019). Marzano's Taxonomy's ability to map thinking processes more comprehensively makes it relevant for use in developing an assessment system oriented toward higher-order thinking skills, self-reflection, and the character development of students (Darmawan, 2024a). Further empirical support is provided by Adi et al. (2025), who found that integrating the Marzano Taxonomy into the development of assessment instruments enhances teachers' competence in creating higher-quality assessments. Teachers become better equipped to design indicators that measure higher-order thinking skills and align learning processes with 21st-century competency requirements.

At the international level, Almekhlafi et al. (2020) found that the use of Marzano-based learning strategies contributes to increased learning effectiveness and student engagement. Akram and Malik (2023) also reported that the implementation of the Marzano model has a positive impact on the quality of the teaching and learning process. Research by Hasan (2024), Brescia (2021), and Grinder (2025) further reinforces the finding that the Marzano approach is effective in improving the quality of learning, student engagement, and learning outcomes. Although various studies have proven the effectiveness of the Marzano Taxonomy in learning and assessment, research on the development of a Marzano Taxonomy-based assessment model for Pancasila Education remains relatively limited, particularly at the high school level within the context of the Merdeka Curriculum implementation. Most research still focuses on the development of instruments for science and mathematics subjects, while the need for an assessment model capable of measuring citizenship competencies, character, and higher-order thinking skills in Pancasila Education has not been extensively studied.

Based on the above discussion, the development of a Marzano Taxonomy-based assessment model for Pancasila Education is essential. This assessment model is expected to produce instruments that are valid, practical, and effective in comprehensively measuring students' cognitive, metacognitive, and self-system abilities. In addition to contributing to the strengthening of the Pancasila Education learning evaluation system, this study is also expected to provide an alternative solution for teachers in developing assessments that align with the requirements of the Merdeka Curriculum, 21st-century learning needs, and the achievement of the Pancasila Student Profile.

Method

This study employs a Research and Development (R&D) methodology aimed at producing a valid, practical, and feasible model for assessing Pancasila education based on Marzano's Taxonomy. The development model used refers to the 4D (Four-D Model) developed by Thiagarajan, Semmel, and Semmel; however, in this study, it was modified into a 3D (Define, Design, Develop) model by omitting the Disseminate stage (Sugiyono, 2019) . This modification was made because the study focused on the process of developing, validating, and piloting the product within a limited scope without widely disseminating the product. The study was conducted at YP Unila High School in Bandar Lampung during the 2025/2026 academic year. The research subjects were selected based on the needs of each development phase. During the definition phase, the research subjects consisted of two Pancasila Education teachers and 60 tenth-grade students who participated in the needs

analysis. In the development phase, product validation was conducted by three validators consisting of an educational evaluation expert, a Pancasila Education expert, and a learning assessment expert. Subsequently, a limited pilot test was conducted with 30 10th-grade students, while the field trial involved 60 students from two different classes. Research subjects were selected using purposive sampling, taking into account the subjects' direct relevance to the use of the developed assessment model.

This study employed a three-stage model of assessment development. The define stage was conducted to identify needs through an analysis of the curriculum, learning outcomes, student characteristics, teacher needs, and an evaluation of the instruments used. The results indicated that assessment still focuses predominantly on lower-order cognitive skills and does not yet accommodate higher-order thinking, metacognitive, and self-system skills. The design phase focused on developing an assessment model based on Marzano's Taxonomy, including the development of indicators, rubrics, assessment items, and user guidelines. The assessment was structured according to Marzano's six levels retrieval, comprehension, analysis, knowledge utilization, metacognitive system, and self-system to produce a more comprehensive assessment. The development stage includes expert validation, product revision, as well as limited and field trials. Validation is conducted on the aspects of content, construction, language, and alignment with the Marzano Taxonomy. Expert input is used for improvements prior to the trials to assess the practicality and feasibility of the model in Pancasila Education instruction.

Research data were collected through interviews, needs analysis questionnaires, expert validation sheets, teacher and student response questionnaires, and documentation. Qualitative data were analyzed using interactive analysis techniques, including data reduction, data presentation, and drawing conclusions. Meanwhile, quantitative data were analyzed using descriptive statistics in the form of percentages to determine the level of validity, practicality, and feasibility of the developed assessment model. The assessment criteria referred to the categories of highly valid, valid, moderately valid, less valid, and invalid according to the predetermined percentage ranges. This study does not use a quasi-experimental design because the primary focus of the research is product development, not testing the effect of treatment on learning outcomes. Therefore, claims regarding the model's effectiveness in improving learning outcomes are not the primary objective of the study. This research is more directed toward developing an assessment model that meets the criteria of validity, practicality, and feasibility for use in Pancasila Education instruction.

Result and Discussion

Define Phase

The definition phase aims to identify the need to develop a Pancasila education learning assessment model based on Marzano's Taxonomy. Activities in this phase include curriculum analysis, teacher needs analysis, student characteristics analysis, and analysis of the assessment instruments used at YP Unila High School in Bandar Lampung. The results of the curriculum analysis indicate that the learning outcomes for Pancasila Education in the Merdeka Curriculum require not only mastery of citizenship concepts but also critical thinking skills, decision-making, self-reflection, and the internalization of Pancasila values. However, the results of the assessment instrument analysis show that most of the questions used by teachers are still at the recall and comprehension levels.

Table 1. Results of the Analysis of Assessment Instruments Used by Teachers

Level Taksonomi Marzano	Number of Items	Percentage
Retrieval	14	46,67%
Comprehension	10	33,33%
Analysis	4	13,33%
Knowledge Utilization	2	6,67%
Metacognitive System	0	0%
Self-System	0	0%
Total	30	100%

The data indicate that the assessment tools currently in use are not yet capable of optimally measuring students' higher-order thinking skills and character traits. Next, a needs analysis was conducted for Pancasila Education teachers.

Table 2. Results of the Teacher Needs Analysis

Indicator	Percentage
Requires a HOTS-based assessment model	95%
Requires a tool based on the Marzano Taxonomy	90%
Having trouble creating metacognitive-level questions	88%
Having difficulty assessing students' character	92%
Requires a systematic assessment guide	100%

The interview results indicate that teachers need an assessment model capable of measuring students' cognitive, metacognitive, and character aspects in an integrated manner.

Design Phase

Based on the results of the needs analysis, the researchers designed a model for assessing Pancasila education based on Marzano's Taxonomy. The model developed consists of an instrument outline, scoring guidelines, an assessment rubric, and a set of questions that cover all levels of Marzano's Taxonomy.

Table 3. Structure of the Developed Assessment Model

Components	Description
Assessment Guidelines	Includes learning outcomes and Marzano indicators
Test Instruments	Multiple-choice and essay questions
Assessment Section	Analysis, reflection, and decision-making
Scoring Guidelines	Scores based on skill level
Teacher's Guide	Assessment Implementation Guidelines

The instrument consists of 30 items distributed across six levels of Marzano's Taxonomy.

Table 4. Distribution of Instrument Items Based on Marzano's Taxonomy

Taxonomic Level	Number of Questions
Retrieval	5
Comprehension	5
Analysis	6
Knowledge Utilization	5
Metacognitive System	4
Self-System	5
Total	30

The distribution indicates that the assessment model developed not only focuses on basic cognitive aspects but also measures higher-order thinking skills, self-reflection, and the internalization of values.

Develop Phase

The development phase aims to produce an initial version of the Pancasila Education Assessment Model based on Marzano's Taxonomy. Development was conducted based on the results of a needs analysis, which indicated that assessment in schools still focuses on lower-order cognitive skills. The resulting products include a guidebook, test blueprints, test and non-test instruments, rubrics, and guidelines for scoring and interpreting results. All components are structured according to the six levels of Marzano's Taxonomy. retrieval, comprehension, analysis, knowledge utilization, metacognitive system, and self-system. The initial product is then validated by experts to assess its content, construction, language, and feasibility before undergoing revisions and field testing.

The validation was conducted by three validators, including an educational evaluation expert, an expert in Pancasila education, and a learning assessment expert. The aspects evaluated included content, instrument design, language, and alignment with Marzano's Taxonomy.

Table 5. Expert Validation Results

Assessment Criteria	Validator 1	Validator 2	Validator 3	On average
Appropriateness of the Material	92%	95%	94%	93,67%
Instrument Construction	90%	93%	95%	92,67%
Language	88%	92%	94%	91,33%
Marzano Taxonomy Alignment	95%	96%	97%	96,00%
Average Total	**91,25%**	**94,00%**	**95,00%**	**93,42%**

Based on the validation results, the assessment model achieved an average score of 93.42%, falling into the "highly valid" category.

Table 6. Validator Recommendations

Validator	Suggestions for Improvement
Evaluation Specialist	Clarifying indicators of metacognitive levels
Subject Matter Expert	Adapting the context of the questions to the students' lives
Assessment Specialist	Add a self-reflection assessment section

All feedback from the validators is used to revise the product before testing.

Limited Trial

A pilot study was conducted with 30 tenth-grade students.

Table 7. Students' Responses in the Limited Pilot Test

Aspek	Percentage
Clarity of Instruments	88%
Ease of Understanding the Questions	86%
Appropriateness of the Material	90%
Fostering Critical Thinking	92%
Fostering Self-Reflection	89%
Average	89,00%

The results of limited testing indicate that the assessment model falls into the "highly practical" category.

Table 8. Teachers' Responses to the Assessment Model

Aspect	Percentage
Ease of Use	92%
Alignment with the Merdeka Curriculum	95%
Ability to Assess Higher-Order Thinking Skills	94%
The Ability to Assess Character	90%

Average	**92,75%**

Teachers have responded very positively to the model that was developed.

Field Test

A field trial was conducted with 60 tenth-grade students.

Table 9. Results of the Assessment Model's Practicality

Aspek	Percentage
Ease of Use	91%
Clarity of Instruments	90%
Clarity of the Questions	92%
Appropriateness of the Material	94%
The Benefits of the Instrument	93%
Average	92,00%

The results indicate that the assessment model is highly practical.

Table 10. Product Feasibility Results

Assessment Components	Percentage
Validity	**93,42%**
Teachers' Practicality	**92,75%**
Students' Practical Skills	**92,00%**
Average Total	**92,72%**

Based on expert validation results, teacher feedback, and student feedback, the Marzano Taxonomy-based assessment model for Pancasila education achieved a feasibility score of 92.72%, falling into the "highly feasible" category for use in instruction.

Final Product

1) The final research product is an Assessment Model for Pancasila Education Based on Marzano's Taxonomy, consisting of.
2) An assessment model guidebook.
3) An instrument rubric based on Marzano's Taxonomy.
4) Test and non-test instruments.
5) Assessment rubrics for the levels of analysis, application of knowledge, metacognition, and self-system.
6) Guidelines for scoring and interpreting assessment results.

The model developed is capable of measuring higher-order thinking skills, self-reflection, decision-making, and the internalization of Pancasila values in a more comprehensive manner than the conventional assessment tools that have been used in schools to date.

Here is a look at the final product of the development:

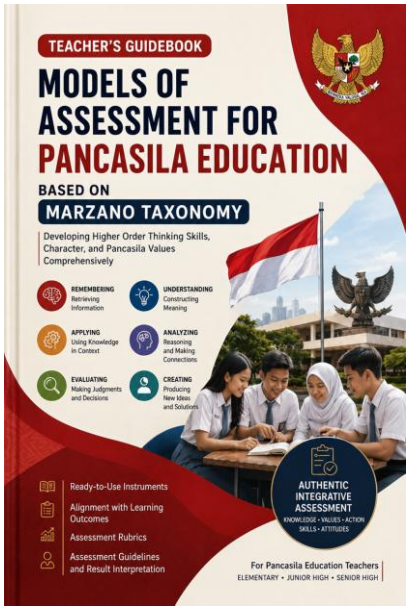

Figure 1. Cover of the Marzano Taxonomy Guidebook

The development of a Marzano Taxonomy-Based Assessment Model for Pancasila Education was undertaken to address the need for an assessment system capable of measuring learning outcomes more comprehensively. The research findings indicate that the instruments used by teachers are still dominated by the measurement of lower-order cognitive skills, particularly at the retrieval and comprehension levels. This situation indicates a gap between the objectives of Pancasila Education in the Merdeka Curriculum and the assessment practices implemented in schools. Pancasila Education emphasizes not only mastery of citizenship concepts but also critical thinking, decision-making, self-reflection, and the development of responsible citizens (Saleh & Meinarno, 2018; Slam, 2024). This finding aligns with Retnoningsih (2020b), who states that the assessment of Civic Education still faces challenges in integrating knowledge, skills, and attitudes in a comprehensive manner. Furthermore, the development of Pancasila education in the Merdeka Curriculum era requires assessments capable of measuring higher-order thinking skills as well as the continuous character development of students (Efendi & Musyaffa, n.d.; Lubis & Azizan, 2026).

The results of the needs analysis show that most assessment instruments are at the retrieval and comprehension levels. These findings indicate that the evaluation process still focuses on the ability to recall and understand information. In fact, Pancasila Education aims to develop students' ability to analyze social issues, evaluate various alternative solutions, and make decisions based on Pancasila values. Bloom (2010) explain that higher-order thinking skills develop through activities involving analysis, evaluation, and the creation of solutions to contextual problems. This perspective is reinforced by Toledo & Dubas (2016), who assert that the development of higher-order thinking skills requires assessment instruments capable of measuring the thinking process in a step-by-step and in-depth manner. Also found that the use of the Marzano Taxonomy framework can help students develop their analytical and problem-solving skills in a more systematic manner. Marzano & Kendall (2006a) demonstrated that Marzano Taxonomy-based assessment is effective in measuring Higher Order Thinking Skills (HOTS) because it can identify students' thinking processes from the level of understanding to the application of knowledge. These competencies are an important part of shaping democratic, critical, and participatory citizens, as is the primary goal of Pancasila and Civic Education (Antasari, 2021).

The development of a model based on Marzano's Taxonomy is relevant because this framework offers a more comprehensive assessment system than traditional cognitive taxonomies. Marzano & Kendall (2006b) explain that the learning process is influenced by three main systems. the cognitive system, the metacognitive system, and the self-system. The cognitive system relates to information processing, the metacognitive system relates to the control of thinking processes, while the self-system relates to an individual's motivation, values, and beliefs regarding learning. This framework enables teachers to develop instruments that not only measure what students know but also how they think and interpret their learning experiences (Bahtiar & Subyantoro, 2021; Hasan, 2024c; Hossain et al., 2021; Lertchanadecha & Kitroongrueng, 2024).

The model developed accommodates the six levels of Marzano's Taxonomy. retrieval, comprehension, analysis, knowledge utilization, metacognitive system, and self-system. The inclusion of the analysis and knowledge utilization levels enables teachers to assess students' ability to identify social issues, connect concepts to real-life situations, and formulate solutions based on the values of Pancasila. These competencies are an essential component in the development of civic skills required for democratic life (Sutrisno & Asmaroini, 2026).

One of the main strengths of the developed model lies in the integration of the metacognitive system and self-system dimensions. From a constructivist perspective, learners are active agents who construct knowledge through experience and reflection on their learning (Piaget & Inhelder, 2008; Vygotsky, 1978). This reflection is closely related to the concept of metacognition proposed by Flavell (n.d.), namely the individual's ability to be aware of, monitor, and evaluate their own thinking processes. Through the metacognitive dimension, learners can assess the learning strategies they use and plan for improvements in their learning. Irvine (2020) explains that Marzano's Taxonomy provides a broader scope for measuring affective and motivational aspects that are often not accommodated in conventional assessments. These aspects are highly relevant in Pancasila Education because learning objectives are not only oriented toward conceptual mastery but also toward character development and the formation of national identity.

The results of the expert validation indicate that the model achieved a validity rate of 93.42%, classified as highly valid. The high level of validity indicates that the indicators, instruments, rubrics, and scoring guidelines align with the characteristics of Pancasila Education and the principles of Marzano's Taxonomy. A valid instrument is capable of generating accurate information regarding students' competencies. These findings are consistent with the research by W. K. Sari & Nada (2022), which shows that instruments based on the Marzano Taxonomy have high validity in measuring students' analytical and creative thinking skills. These results indicate that the Marzano Taxonomy has strong potential for use in developing assessment systems across various subjects, including Pancasila Education.

The practicality of the model also received a very positive response from teachers and students. Teachers found the model to be more systematic and helpful in the learning evaluation process, while students felt that the instrument encouraged them to think more critically and reflectively. These findings can be explained through Ausubel (2012) theory of meaningful learning, which states that learning is more effective when new information is linked to prior experiences and knowledge. Case-study-based instruments and contextual problems provide students with the opportunity to connect Pancasila Education material with the social realities they face.

Another important aspect is the integration of the self-system into the assessment process. Until now, most evaluation systems have focused primarily on measuring cognitive aspects. However, motivation, commitment, self-confidence, and learning awareness play a crucial role in determining learning success. Marzano & Kendall (2006b) explain that the self-system functions as the primary driver of individual engagement in learning. This finding is reinforced by Darmawan (2024a), who demonstrates that the self-system dimension contributes to increased motivation, responsibility, and students' awareness of the learning process. In the context of Pancasila Education, this aspect is crucial because the values of Pancasila need to be internalized into concrete attitudes and behaviors. The model developed also supports the development of higher-order thinking skills. The levels of analysis and knowledge utilization enable students to analyze social issues, evaluate alternative solutions, and make rational decisions. These findings are consistent with Suryani (2023a) research, which shows that the Marzano-based learning framework is effective in enhancing students' higher-order thinking skills.

Overall, the Marzano Taxonomy-based assessment model is capable of addressing assessment needs that align with the requirements of the Merdeka Curriculum. This model not only measures knowledge mastery but also higher-order thinking skills, self-reflection, learning motivation, and the internalization of Pancasila values. These characteristics make the developed model a theoretical contribution to the development of educational assessment and a practical contribution for teachers in conducting more authentic, comprehensive, and meaningful assessments.

Conclusion

This study produced a Marzano Taxonomy-Based Assessment Model for Pancasila Education designed to measure student competencies more comprehensively through the integration of cognitive, metacognitive, and self-system aspects. The results of the needs analysis indicate that the assessment instruments used in schools are still dominated by the measurement of lower-order thinking skills at the retrieval and comprehension levels, while the abilities of analysis, application of knowledge, self-reflection, and internalization of Pancasila values have not been optimally measured. This situation indicates a gap between the learning objectives of Pancasila Education in the Merdeka Curriculum and the assessment practices currently implemented.

The model, developed through the Define, Design, and Develop phases, has met the criteria for high validity based on expert evaluations and received positive feedback from teachers and students during the pilot phase. This model broadens the scope of assessment by measuring students' critical thinking, problem-solving, decision-making, and learning reflection skills, as well as their commitment to the values of Pancasila. The inclusion of the metacognitive system and self-system dimensions is a key strength, as it allows teachers to gain deeper insights into students' thinking processes and character development. The Marzano Taxonomy-based assessment model can serve as a relevant alternative for supporting the implementation of the Merdeka Curriculum and strengthening the Pancasila Student Profile.

Pancasila Education teachers are advised to use the Marzano Taxonomy-based assessment model as an alternative assessment tool to measure students' higher-order thinking skills and character in an integrated manner. Schools need to provide support

through training on the development of assessment instruments focused on analytical, metacognitive, and self-system skills. Further research needs to be conducted across different educational levels and school characteristics to test the consistency of the model's implementation. Testing the model's effectiveness through experimental designs is also crucial to determine its impact on enhancing students' critical thinking skills, civic competencies, and the internalization of Pancasila values.

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