

Towards a Pancasila Student Profile: Implementation of Multicultural Education in Shaping the Character of Tolerance and Gotong Royong in Learning Natural and Social Sciences in Elementary Schools

Silfi Melindawati^{1*}, E.Kus Eddy Santono², Wuri Wuryandani³, Fatia Fatimah⁴

¹ Universitas Adzkia, Indonesia.

^{2,3} Universitas Negeri Yogyakarta, Indonesia.

⁴ Universitas Terbuka, Indonesia.

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Corresponding Author:

Silfi Melindawati

silfi.m@adzkia.ac.id

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Abstract: This research aims to develop and implement a multicultural education program in Science and Social learning in elementary schools to shape students' characters according to the learner profile of Pancasila, especially in terms of tolerance and mutual cooperation. The ADDIE (Analysis, Design, Development, Implementation, and Evaluation) approach was used in designing this program. The results showed a significant increase in students' understanding of the values of tolerance and mutual cooperation, as seen from the comparison of pre-test and post-test scores. Students showed a more active and open attitude towards differences, while teachers felt the program helped enrich learning. The evaluation also indicated that the program needs to be adapted for different abilities of students. In conclusion, this multicultural education program proved to be effective in shaping character according to the values of Pancasila and deserves to be implemented more widely.

Keywords: Multicultural education; Pancasila Student Profile; Science and social learning.

Introduction

Education is the main instrument in shaping the character of the nation that reflects the values contained in Pancasila, especially in the midst of Indonesia's cultural, ethnic, religious and linguistic diversity (Buhler et al., 2024; Faisal et al., 2020; Rachman et al., 2024; Suntana et al., 2023). One of the characteristics expected to emerge from Pancasila education is tolerance and mutual cooperation, which are crucial for maintaining harmony in a multicultural society (Brooks & Weber, 2022; Lee et al., 2020; Makate & Nyamuranga, 2024; Wang & Ma, 2024). At the primary school level, the role of education to shape the profile of Pancasila learners becomes increasingly important as a foundation for

children to understand and apply diversity and social values (Amanda et al., 2021; Anwar et al., 2024; Ekantini et al., 2024; Ismawati et al., 2023).

However, the reality on the ground shows that there are still various challenges in realizing the character of tolerance and mutual cooperation through formal education. Several studies indicate that the multicultural education approach that supports cultural diversity and the teaching of social values in elementary schools has not been optimally implemented. Students still tend not to fully understand the meaning of tolerance and there are often still limitations in the application of mutual cooperation attitudes in everyday life at school (Ilma et al., 2022; Laksono & Widiyatmoko, 2022; Parmin & Savitri, 2020). This encourages the need

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for innovation in learning that integrates Pancasila values into the curriculum, especially in Science and Social subjects that play a role in introducing the concept of nature and society to students (Fatmawati et al., 2024; Tanti et al., 2020; Yasir & Dwiyantri, 2023).

This research fills a gap in the literature on multicultural education in Indonesia, where previous studies Imran et al. (2021), Parmiti et al. (2021), Rusilowati et al. (2024) have focused more on theoretical aspects and less on practical implementation in the classroom (Hermawan et al., 2022; Irfandi et al., 2023; Thao et al., 2024). Various relevant studies have shown the importance of multicultural education in building social awareness and tolerance among students, but few have explored its application in the context of Science and Social Studies learning (Fahrudin et al., 2023; Hanifha et al., 2023; Leksono et al., 2023; Wibowo et al., 2024). The novelty of this study lies in its integrated approach, combining character education theory with concrete multicultural education practices in primary schools, as well as emphasizing the importance of Pancasila values in the learning process (Suntana et al., 2023; Zhang et al., 2024; Zhu, 2024).

This research aims to explore the application of multicultural education in Science and Social Studies learning in primary schools as an effort to shape students' tolerance and gotong royong character. By identifying and understanding successful educational practices in supporting the creation of tolerant and gotong royong student characters, this research is expected to make a real contribution in supporting the profile of Pancasila learners. In this context, relevant data and facts will be presented to describe the real condition of multicultural education implementation in elementary schools, as well as evaluate the approaches used in Science and Social learning.

This research is expected to provide benefits for the development of a more inclusive and multicultural curriculum at the primary level. Thus, this study is expected to not only enrich the theory of character and multicultural education, but also provide practical recommendations for teachers in implementing Pancasila values in daily learning.

Method

This research uses a Research and Development (R&D) approach with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development model to develop a multicultural education program in Science and Social learning that is able to shape the character of tolerance and mutual cooperation in elementary school students. The ADDIE model was chosen because it provides systematic steps

in the development and implementation of learning programs, thus facilitating the process of designing, implementing, and evaluating the success of this multicultural education program in shaping student character in accordance with the Pancasila learner profile (Karlina & Hindriana, 2023; Salim et al., 2023; Yulia et al., 2023).

At the analysis stage, it was carried out to identify the needs of students and teachers for multicultural education programs in elementary schools. Researchers conducted observations and interviews to obtain data on students' understanding of tolerance and mutual cooperation as well as the approaches that teachers have applied in Science and Social learning. The needs analysis also included a literature review to identify relevant theories on character education and multicultural education, as well as the role of Science and Social subjects in developing student character.

Based on the results of the needs analysis, researchers designed a multicultural education program integrated in Science and Social studies with a focus on strengthening the characters of tolerance and mutual cooperation. This program design includes the creation of syllabus, teaching materials, and appropriate learning strategies. This design is designed so that students can learn Science and Social concepts while internalizing Pancasila values, especially through collaborative and interactive activities that encourage mutual respect and cooperation.

At the development stage, researchers began to produce teaching materials and learning aids according to the design that had been designed. The teaching materials were tested on a small scale to get feedback from teachers and students regarding the effectiveness of the materials and approaches used. The results of this trial were used to revise and refine the program to better suit the needs of students and support the achievement of tolerance and mutual cooperation characters.

The implementation stage involves applying the developed multicultural education program to Science and Social Studies learning in the classroom. The teachers involved were given training on the use of teaching materials and strategies that support multicultural learning in the classroom. During the implementation process, researchers observed and documented the implementation of learning, student interactions, and teacher and student responses to the program to see how the characters of tolerance and mutual cooperation can be formed in daily learning activities.

The evaluation stage was conducted to assess the effectiveness of the multicultural education program in shaping students' tolerance and mutual cooperation characters. This evaluation was conducted using

formative and summative evaluation approaches. Formative evaluation is conducted during the development and implementation stages to identify aspects that need to be improved, while summative evaluation is conducted at the end of the study to assess the achievement of the final results. Evaluation data was

collected through observations, interviews, and questionnaires given to students and teachers to measure changes in students' understanding and attitudes towards the values of tolerance and mutual cooperation.

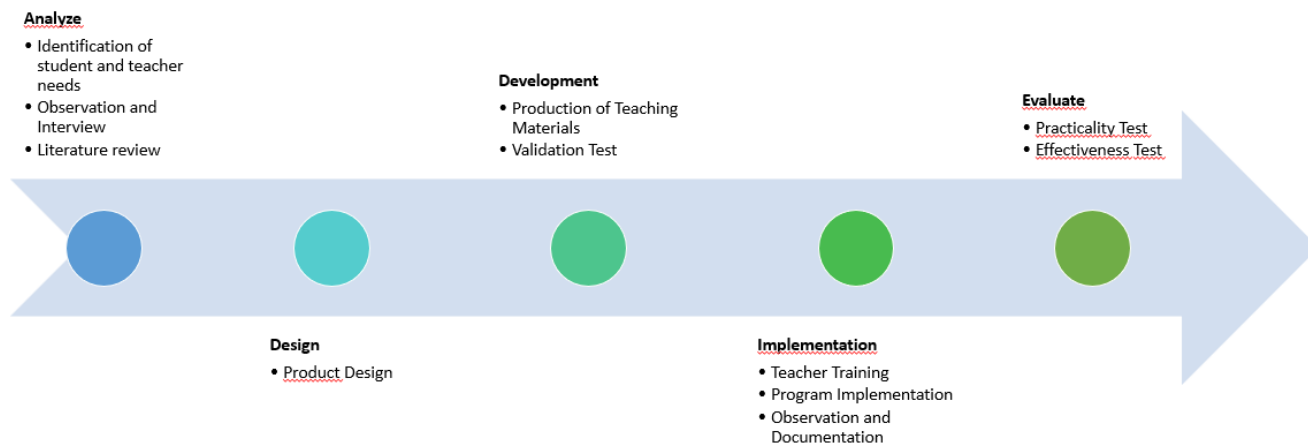


Figure 1. Flow of the ADDIE Model Research Stages

Result and Discussion

Analysis Stage

At the analysis stage, the results of observations and interviews with teachers and students show in Table 1. Most students do not have a deep understanding of

the concepts of tolerance and gotong royong, and are less familiar with cultural diversity in Indonesia. Teachers revealed that learning activities in the classroom generally have not focused on multicultural character development explicitly.

Table 1. Multicultural Education Needs

Aspects	Research Findings	Needs
Student Understanding of Tolerance	Most students do not have a deep understanding of the concept of tolerance.	Learning programs that introduce the concept of tolerance explicitly in teaching and learning activities.
Students' Understanding of Gotong Royong	Students do not understand the importance of mutual cooperation in everyday life.	Collaborative activities that encourage the practice of gotong royong in the classroom and link it to the values of Pancasila.
Knowledge of Cultural Diversity	Students are less familiar with the cultural diversity that exists in Indonesia.	Learning materials that introduce cultural diversity through activities relevant to students' lives.
Learning Focus	Learning in the classroom generally has not focused on developing multicultural characters explicitly.	Lesson plans that specifically target multicultural character development.
Barriers to Science and Social Learning	Teachers have difficulty in linking Science and Social materials with Pancasila values, especially tolerance and mutual cooperation.	Teaching materials and guides that help teachers integrate the values of tolerance and gotong royong in Science and Social Studies.

Barriers in Science and Social learning

Teachers often experience difficulties in linking Science and Social materials with Pancasila values, especially in the aspects of tolerance and mutual cooperation. This prompts the need for a more structured learning design to integrate these values. This analysis reinforces the urgency of developing a

multicultural education program in Science and Social learning, which not only teaches academic materials, but also internalizes Pancasila values.

Table 2. Barriers in Science and Social learning

Aspects	Barriers	Needs
Integration of Tolerance Value	Teachers have difficulty in linking Science and Social materials with the value of tolerance.	Learning design that integrates the concept of tolerance explicitly in Science and Social materials.
Integration of Mutual Cooperation Value	Teachers have difficulty linking Science and Social materials with the value of gotong royong, making it difficult for students to understand its application.	Collaborative activities in Science and Social learning that emphasize the practice of gotong royong.
Learning Structure	Lack of structured learning design to link Science and Social materials with Pancasila values.	Syllabus and lesson plans specifically designed to link Science and Social learning with Pancasila values.

Design Stage

At the design stage, the research produced a multicultural education program framework for Science and Social subjects specifically designed to encourage students' understanding of the values of tolerance and mutual cooperation. One of the main components developed was a learning module that covered Science and Social topics relevant to Indonesia's natural and cultural diversity, such as ecosystems, flora and fauna diversity, and the social structure of society.

In addition to the module, teaching materials and learning activities are also designed to support the exploration of tolerance and mutual cooperation values. Teaching materials emphasize the importance of collaboration in groups, discussion of differences of opinion, and mutual cooperation tasks. For example, group learning activities that examine the environment in different regions of Indonesia can encourage students to appreciate cultural diversity and improve cooperation skills. The program design integrates collaborative activities and approaches that allow students to observe, understand and internalize Pancasila values directly in their daily lives.

Table 3. Research Product Design

Component	Description	Purpose
Multicultural Education Program Framework	The multicultural education program is designed to introduce the concepts of tolerance and mutual cooperation through materials that are in line with the Science and Social curriculum.	Encourage students' understanding of the values of Pancasila, especially tolerance and gotong royong.
Learning Modules	The modules are organized around topics relevant to elementary school students, such as ecosystems, flora and fauna diversity, and the social structure of society.	Linking Science and Social materials with the values of diversity and gotong royong in the context of Indonesian culture and nature.
Collaborative Learning Activities	Learning activities include group discussions, group projects, and simulations of social situations that encourage cooperation and mutual respect.	Helps students understand the importance of mutual cooperation and tolerance through real practice.

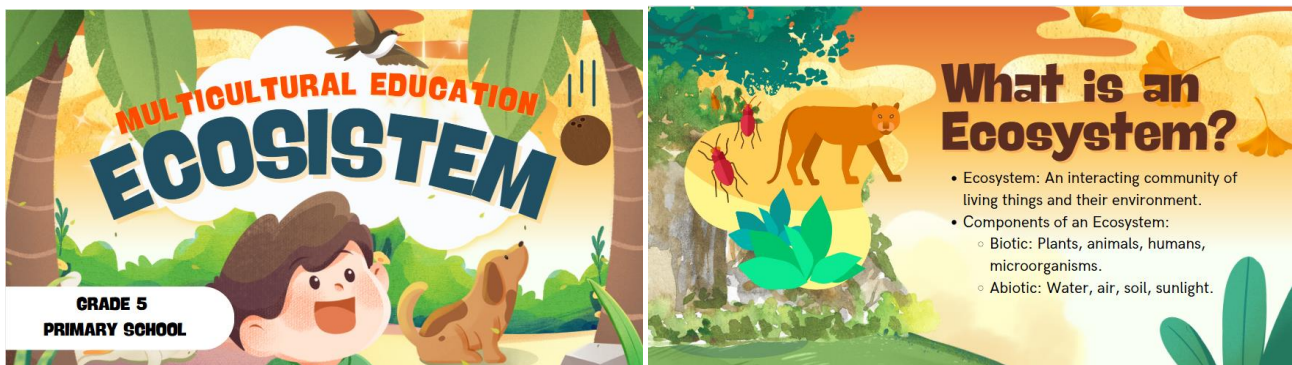


Figure 2. Learning Media Display

Development Stage

In the development stage, the designed teaching materials and assessment instruments were tested on a small scale with the following results as shown in Figure 4.

The results of the multicultural education product validation test for Science and Social learning showed a high level of feasibility, with an average score above 90. This product is considered relevant to the values of Pancasila, especially tolerance and mutual cooperation,

and in accordance with the learning objectives. The teaching materials are attractive to students because they are linked to culture and daily life, while the visual appearance and structure of the materials are sufficient to support readability and facilitate their use in the classroom. The language used is simple and appropriate

to the cultural context of elementary school students, making it effective for understanding the values of Pancasila. Some minor improvements are suggested, such as adding illustrations and completing information to increase the attractiveness and completeness of the teaching materials.

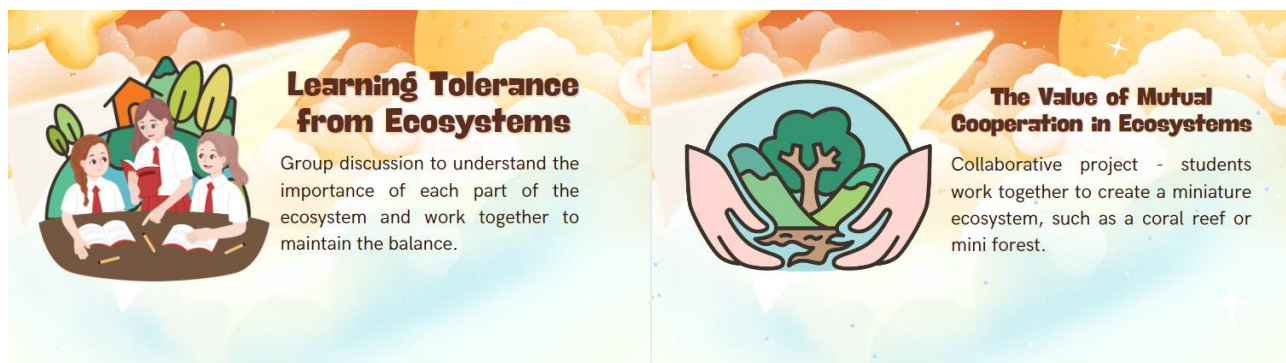


Figure 3. Value of Tolerance and Mutual Cooperation

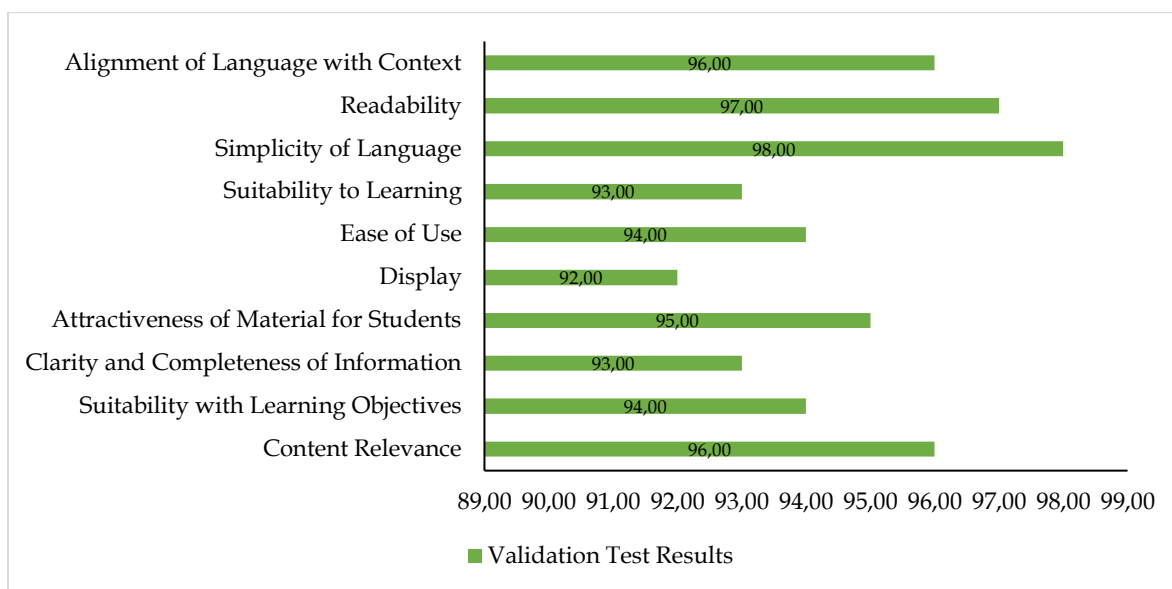


Figure 4. Validation Test Results

Based on the feedback, some adjustments were made, such as simplifying the language in the teaching materials to make it easier for elementary school students to understand, and adding examples that are more relevant to students' daily lives. This development stage produces teaching materials and learning tools that are more mature and in accordance with the needs of students and the elementary school curriculum.

Implementation Stage

The refined program was implemented in Science and Social classes in elementary schools with the following results.

Classroom Implementation

The program runs for 4 weeks, with activities such as group discussions, collaborative projects, and role simulations that hone students' ability to work together and respect differences. Students were active in discussion and cooperation, showing improvement in tolerance and mutual cooperation.

Student and Teacher Response

Students stated that they felt they better understood the importance of respecting differences, while teachers felt the program enriched learning with Pancasila values. Teachers also noted that students seemed more open to working with their peers from different backgrounds. The implementation shows that

learning that emphasizes collaboration and student engagement can improve their understanding of the values of tolerance and gotong royong.

Evaluation Stage

The program evaluation was carried out by practicality and effectiveness tests with the following results as shown in Table 4.

Table 4. Practicality Test Result

Assessment Aspect	School A (Average Score)	School B (Average Score)
Practicality of the Material	4.5/5.00	4.2/5.00
Relevance to the Curriculum	4.6/5.00	4.4/5.00
Ease of Implementation in the Classroom	4.7/5.00	4.3/5.00
Student Involvement	4.8/5.00	4.5/5.00
Student Acceptance of the Material	4.6/5.00	4.4/5.00
Student Feedback	4.7/5.00	4.5/5.00
Teacher Feedback	4.6/5.00	4.4/5.00
Overall Practicality	4.6/5.00	4.4/5.00

The results of the practicality test of the multicultural education program showed effectiveness in both schools. School A recorded high scores in almost all aspects, such as material practicality (4.5) and student engagement (4.8), indicating that the materials were easy to understand. School B had slightly lower scores, such as the practicality of the materials (4.2), indicating the need for improvement. Although feedback from students and teachers in both schools was positive, the

Table 7. Paired Samples Test

Parameters	Paired Differences						t	df	Sig. (2-tailed)
	95% Confidence Interval of the Difference								
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1 Pretest - Posttest	-2.87000E1	2.38636	0.53361	-29.81685	-27.58315	-53.785	19	0.000	

Furthermore, the mean difference between the pre-test and post-test scores was -28.7, with a 95% confidence interval that fell between -29.82 and -27.58, showing a stable and significant range of improvement. The t-test results show a value of $t = -53.785$ with $df = 19$ and $p < 0.001$, which is highly significant. With these results, we can conclude that the multicultural education program is effective in improving students' understanding of the values of tolerance and mutual cooperation, as

program still requires adjustments in School B to improve student interaction. Overall, the program is very practical and worthy of wider application in primary school learning.

Effectiveness Test

The paired sample t-test results showed that there was a significant increase in students' scores from pre-test to post-test, indicating the effectiveness of the multicultural education program implemented. The average student pre-test score was 60.0, while the average post-test score increased to 88.7. This increase was accompanied by a change in standard deviation from 1.86 in the pre-test to 2.68 in the post-test, indicating a slight increase in the variation of scores after the program. The correlation between the pre-test and post-test was 0.496, with a significance of $p = 0.026$, indicating a significant positive relationship between the two measurements, meaning that students who had higher pre-test scores tended to maintain good performance on the post-test.

Table 5. Paired T-Test Result Paired Samples Statistics

		Mean	N	Std.	Std. Error
				Deviation	Mean
Pair 1	Pretest	60.0000	20	1.86378	0.41675
	Posttest	88.7000	20	2.67739	0.59868

Table 6. Paired Samples Correlations

Pair 1	Pretest & Posttest	N	Correlation	Sig.
		20	0.496	0.026

evidenced by the significant increase in their post-test scores. The program successfully supports students' character strengthening in accordance with the targeted Pancasila values.

This research focuses on the effectiveness of the implementation of multicultural education in Science and Social learning in primary schools as a means to shape students' profiles with Pancasila character, particularly in the aspects of tolerance and mutual

cooperation (Latifah et al., 2023; Nurwahidah et al., 2023). Based on the results of the pre-test and post-test analysis, this study proves that the learning approach that integrates multicultural values succeeds in improving students' understanding, both of the academic material and of the Pancasila social values to be built. This improvement is shown by a significant increase in the average score of the post-test compared to the pre-test, indicating that students who participated in this program have a deeper understanding of the importance of respecting diversity and working together, which is in accordance with the research objectives (Afian, 2023).

The results of this study are in line with the theory of multicultural education proposed by Elisa et al. (2022) which emphasizes the importance of integrating cultural and social values in the educational process, thus enabling students to appreciate diversity and develop social skills needed in a pluralistic society like Indonesia (Melindawati & Alfiyandri, 2023). In Science and Social learning designed with a multicultural context, students not only learn scientific facts and social concepts, but are also introduced to social values such as tolerance and gotong royong through collaborative learning methods, such as group discussions, joint projects, and role simulations. These activities provide opportunities for students to interact with peers from different backgrounds, thus fostering mutual respect and developing skills in working together towards a common goal.

Theoretically, the program successfully implemented a multicultural education approach in Science and Social Studies teaching, which enabled students to contextually relate learning concepts with Pancasila values. The results of this study also corroborate constructivist theory which states that meaningful learning occurs when students are able to relate new information to personal experiences or values that they understand. Through this program, students can relate academic knowledge to the social values of Pancasila, making learning more meaningful. The approach proved effective in improving students' understanding of tolerance and gotong royong, two key values in the Pancasila learner profile, thus demonstrating that multicultural education can be an effective model in student character development.

The implications of these findings are significant for curriculum development and teaching strategies in Indonesia. The findings suggest that multicultural education can help address the problems of intolerance and lack of gotong royong in society. By integrating Pancasila values in Science and Social Studies lessons, students are taught early on to appreciate differences and to work alongside people from different

backgrounds. This multicultural education program can be a basis for the government and curriculum developers to consider a more structured integration of character values in learning in primary schools, so that the characters of tolerance and gotong royong can continue to be developed in a sustainable manner.

However, in the implementation process, this study also found several obstacles that affect the effectiveness of the program. One of the main obstacles faced is the variation in students' level of understanding in linking academic material with the social values of Pancasila. Students who have diverse family backgrounds or social environments often have different understandings of the values of tolerance and mutual cooperation, so teachers need to adjust their teaching methods to be acceptable to all students. In addition, the limited learning time in class is often an obstacle for teachers in carrying out collaborative learning activities thoroughly. Activities such as group discussions, joint projects, and role simulations require sufficient time allocation in order to take place optimally, but tight learning schedules often make it difficult for teachers to provide sufficient time.

Based on the results and constraints found, the recommendation that can be given in this study is the importance of training for teachers to improve their ability to integrate multicultural education into Science and Social materials. Teachers need to be trained to design learning activities that support students' understanding of Pancasila values, and develop more flexible teaching methods in managing learning time. In addition, support from the school and government in the form of additional time allocation or flexibility in the curriculum for multicultural-based character learning is recommended, so that teachers can run this program optimally. At the policy level, the findings support the recommendation that multicultural education be included as part of the national curriculum, especially at the primary school level, to strengthen character education based on Pancasila values in Indonesia.

This research makes an important contribution in developing a multicultural education model that can shape students' character according to the learner profile of Pancasila. The program developed has proven effective in improving students' understanding of the values of tolerance and gotong royong, which are important foundations in building a peaceful and united society. With various adjustments and support, this multicultural education model has the potential to be applied more widely and sustainably in an effort to form a young generation of Indonesians who appreciate diversity and have a strong character in accordance with the values of Pancasila.

Conclusion

This research shows that the implementation of multicultural education in Science and Social learning in elementary schools is effective in shaping students' character in line with the Pancasila learner profile, especially in the aspects of tolerance and mutual cooperation. The implementation of the program designed with collaborative methods and discussion-based activities succeeded in improving students' understanding of these values, as evidenced by a significant increase in the post-test results compared to the pre-test. The program demonstrated that an educational approach that integrates Indonesian cultural and social values not only enriches academic knowledge, but also develops mutual respect and cooperation among students. Thus, this multicultural education model has the potential to be applied more widely as part of efforts to form a young generation that has a strong character, in accordance with the values of Pancasila, and is able to live in a diverse society.

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In writing this article, the authors do not have any conflict of interest.

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