

The Influence of the STEM-Based I-LVEP Model in Instilling Nationalism Character in Elementary School Students

Shintia Dwi Agustina*, An-Nisa Apriani, Indah Perdana Sari, Suryandari

Department of Elementary School Teacher Education, Faculty of Teacher Training and Education, Universitas Alma Ata Yogyakarta, Indonesia

*Corresponding author: 201300209@almaata.ac.id

ARTICLE INFO

Article history

Received

April 30, 2025

Revised

June 22, 2025

Accepted

June 26, 2025

Keywords

LLVEP;

STEM;

Nationalism character;

Pancasila education;

Character education

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ABSTRACT

The establishment of student character is paramount in Indonesia's teaching. The absence of strong moral principles in students can result in selfishness and ignorance toward the welfare of the country. These actions are caused by an identity crisis due to students' weak personality, the demands of a modern lifestyle, and limited knowledge about the nationalism character. Hence, this study examined the impact of the STEM-based I-LVEP model in instilling students' nationalism character. A quasi-experiment with an associative quantitative approach was adopted, equipped with a pretest-posttest non-equivalent control group design. The population comprised fourth-grade students at SDN Ngebel. The experimental and control groups consisted of 44 students, determined using purposive sampling. This study employed observational data. The statistical analysis utilized a t-test, with a parametric independent sample t-test, unveiling that the t-count surpassed the t-table at a significance level of 0.05. The hypothesis testing demonstrated that the STEM-based I-LVEP learning model impacted students' nationalism character, making it an effective approach for instilling the character. It provides a noteworthy commitment in teaching students to act respectfully, appreciate differences, maintain solidarity, live in harmony, and deliver flexibility to others. These findings can serve as the basis for learning media focusing more on instilling the nationalism character since elementary school.

Citation:

Agustina, S. D., Apriani, A., Sari, I. P., & Suryandari, S. (2025). The Influence of the STEM-Based I-LVEP Model in Instilling Nationalism Character in Elementary School Students. *Journal of Islamic Education and Ethics*, 3(2), 134–150.

INTRODUCTION

Character building of students is an essential factor in today's learning in Indonesia. Learning in the 21st century encourages all students' potential to develop better characters (Syahputra, 2024). Innovative learning strategies can motivate students to be more prepared to learn. To create innovative, communicative, and collaborative students, learning skills are extremely vital (Indarta et al., 2022). Teachers and students must be able to utilize technology to discover learning resources that align with the learning models. The Merdeka Curriculum is one of the educational programs applied in Indonesia, incorporating coordinated information, skills, and state of mind competencies (Apriani & Komalasari, 2024). This curriculum emphasizes the formation of character and abilities based on student competencies. To enhance the quality of learning, the curriculum presents a Pancasila student profile, focusing on the formation of student character (Damiati et al., 2024). Solid character building can be the foundation for progress and achievements.

The Merdeka Curriculum is implemented in both public and Islamic elementary schools by prioritizing project-based learning. The Pancasila student profile is a portion of the curriculum learning, planned to bring students with capacities and maintain character values (Sulistiawati et al., 2022). It is an instrument for cultivating states of mind, behaviors, and values in accordance with Pancasila, such as equity, solidarity, and devotion to the nation. It is essential for the next generation to actively participate in implementing the principles of Pancasila. Students who have positive traits can contribute to the development of patriotism and a competitive future generation of the nation (Riska, 2020). The global diversity dimension is one of the efforts to foster pride and understanding of national identity, diversity, unity, and complete patriotism, as well as love for the country. It is put into practice as a manifestation of nationalism.

The character of nationalism is exceptionally relevant to the Pancasila student profile in the Merdeka Curriculum. The global diversity dimension is still involved in the character of nationalism; some of the similarities are understanding and respecting the national culture, communicating or interacting with others using the national language, reflecting, and being responsible for state regulations (Khoeratunisa et al., 2023). Nationalism, moreover, places individual interests after the interests of the state. The character of nationalism can be a way of thinking, behaving, and acting that displays a sense of solidarity, concern, and high appreciation for the language, social and physical environment, culture, economy, and legal issues of the country (Deviana, 2019). The character of nationalism is critical to be instilled in students, allowing them to maintain social values, their homeland, and their character, as well as to be open when interacting with others to cultivate a sense of mutual respect. However, currently, the nationalism of the young generation of Indonesia has been declining.

The decline in students' nationalism is followed by their tendency to be rough, aggressive, and even brutal. KPAI Aries Adi Leksono mentioned, "Indonesia is experiencing an emergency of violence against children, especially in the field of education, due to the rampant bullying occurring recently" (Annur, 2023). Bullies often feel superior to their victims, while victims feel inferior, resulting in conflict within groups and reducing the sense of national unity and solidarity. "A total of 251 children aged 6-12 years became victims of school violence during January-April 2023" (CNN Indonesia, 2023). This violence contradicts the principle of nationalism, recognizing diversity as an essential and rich component of national identity. This issue can lead to a deterioration in nationalism due to a lack of mutual respect and appreciation as part of national identity. Moral degradation in children emerges as the current issue necessitating an immediate solution. News about deviant behavior of elementary school students highlights the occurrence of battling, badgering, inebriation, and smoking within the school environment (Prihatmojo & Badawi, 2020). Students who do not have strong moral principles tend to be selfish and do not care about the welfare of the country. An identity crisis triggers these actions due to the weak personality of students, the demands of a modern lifestyle, and limited knowledge about their country (Pasha et al., 2021). Students who do not have a strong national identity are more easily influenced by foreign cultures excessively. They can adopt foreign values without filters, which can conflict with national or local values (Fathurrochman & Muslim, 2021). The absence of patriotism causes students to perform such actions.

Some of the current issues include: (1) rising intolerant behavior; (2) the use of inappropriate words; (3) the effects of violence due to ethnic differences; (4) the absence of moral boundaries between good and bad; (5) the weak sense of individual responsibility; (6) dishonesty; and (7) a sense of hatred or suspicion of each other (Revalina et al., 2023). It may happen due to the lack of instilling a nationalism character in students. The nationalism character of elementary school students is currently declining. The less attention of both formal and informal education on nationalism values leads to lower awareness and concern for national history and identity (Saputra et al., 2023). Without a strong understanding of the significance of national unity and the nation's struggle, the nationalism character can be weakened. Apriani & Ariyani (2017) asserted that "LVEP is an educational program offering universal life values by instilling nationalism character values to meet the needs, interests, and abilities of students, helping them learn knowledge and life values simultaneously". Schools can play an active role in instilling nationalism character to foster awareness, appreciation, and dedication to the country. Rusiyono & Apriani (2020) added that "instilling nationalism character in students must be formed since elementary school using appropriate learning methods".

An active and participatory approach shapes students not only as recipients of information but also emotionally and intellectually involved in understanding the importance of positive behavior. Positive behavioral changes are seen since students practice while studying at school. Regarding the issue, instilling national character requires learning

models, methods, and strategies. National character must be instilled in daily life, such as within the school environment (Apriani & Sari, 2020). Incorporating the principles of nationalism into learning can help students improve their character.

Research carried out at SDN Ngebel in September-December 2023 revealed that the instillation of nationalism character had not been emphasized in classroom learning. Nationalism is closely related to Pancasila. The Pancasila Education subject at this elementary school has not included the instillation of a nationalism character. Students display a lack of understanding of the meaning of Pancasila, indicated by the impolite behavior, ignoring teacher advice, not respecting friends or older people, and being picky about friends. Moreover, some students cannot work together in doing group assignments and feel bored and indifferent during learning because they are easily distracted. The low understanding of tolerance in students causes this problem to arise. The absence of an appropriate model to instill a nationalism character during learning also appears as another influencing factor. The applied learning model is still dominated by lectures and discussions because teachers have difficulty explaining to students about Pancasila Education, which is an abstract concept. Teachers have not maximized the use of learning media and other teaching aids. Accordingly, students have increasingly difficulty in developing a nationalism character because of the limited sources of material, available only in textbooks and workbooks (LKS).

The instillation of nationalism character needs to be applied in the learning preparation, one of which is in Pancasila Education, which contains the following elements: "Pancasila, the 1945 Constitution of the Republic of Indonesia, Bhinneka Tunggal Ika, and the Unitary State of the Republic of Indonesia" (Dewi, 2022). Pancasila Education covers the values of the Pancasila character, manifested in society, nation, and state, to produce brilliant and great citizens. The implementation of Pancasila Education requires an appropriate learning model and supporting learning tools.

Teachers as facilitators should prepare lesson plans (RPP), LKS, learning media, and learning models (Apriani, 2021). They should determine a suitable model to establish meaningful learning that instills a nationalism character in students. Living Values Education Program (LVEP) can be utilized as an elective learning model to cultivate anti-radicalism understanding in an effort to reinforce character education (Apriani & Suwandi, 2019). The Islamic-Living Values Education Program (I-LVEP), based on Science, Technology, Engineering, and Mathematics (STEM), is one of the many learning models that can be applied. This model can be employed to teach good values based on Islamic law (Apriani & Sari, 2024). The STEM-based I-LVEP learning model is highly beneficial for elementary school students as it believes that life values can shape noble morals.

Hence, teachers can be positive role models for students (Apriani, 2021). LVEP helps students to feel the experience within themselves and strengthen their potential, creativity,

and talents. LVEP has to be instructed to students since it can be advantageous for themselves, others, and the broader community that prioritizes harmony in diversity (Komalasari & Apriani, 2023). Students can practice Islamic values valid for everyday life for themselves and others. They can also apply 21 skills by combining information, abilities, and behaviors to instill character values.

Through the arrangement of positive character values, students will learn to respect and appreciate national values such as diversity, unity, and realize the character of nationalism. The STEM-based I-LVEP model can cultivate a sense of resilience toward differing qualities and reflect a sense of cherishing the country. The model was designed by integrating Islamic religious values in LVEP (Apriani & Sari, 2024). It teaches students to behave politely and respect differences. Students are taught to uphold the attitudes of unity, live in harmony, and give freedom to others. Therefore, it is vital to study the influence of the STEM-based I-LVEP model in instilling nationalism character in elementary school students.

RESEARCH METHOD

This study utilized a quasi-experimental design with an associative quantitative approach, equipped with a pre-test and post-test non-equivalent control group design. Students of Classes IVA and IVB of SDN Ngebel, Bantul, Yogyakarta, who had homogeneous characteristics, served as the object of the study. The study population covered fourth-grade students, totaling 44. The research sample was taken from the entire population using purposive sampling. Class IVB was the experimental group, treated using the STEM-based I-LVEP model during Pancasila Education. Meanwhile, Class IVA was the control group, exposed to traditional learning.

This research was conducted in the even semester of the 2023/2024 academic year, precisely from February to June 2024 at SDN Ngebel. Experimental observation was adopted to obtain data on student behavior and the implementation of STEM-based I-LVEP learning using RPP, media, and LKS based on the Merdeka Curriculum and Pancasila Education.

RESULTS AND DISCUSSION

This research aims to determine the impact of the STEM-based I-LVEP model on the character of nationalism instilled in fourth-grade students of SDN Ngebel. The subject of this research comprised Class IVA students (control group) and Class IVB students (experimental group), totalling 44 students.

Prerequisite Analysis Test

The normality test of students' nationalism character utilized the one-sample Kolmogorov-Smirnov. If Asymp. Sig > 0.05, the data are normally distributed. Conversely, if

Asymp. Sig < 0.05, the data are not normally distributed”. Table 1 displays the results of the normality test for the nationalism character of the fourth-grade students of SDN Ngebel.

Table 1. Normality Test Results

Grade IV	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Pre-test experiment	0.116	22	0.200*
Post-test experiment	0.141	22	0.200*
Pre-test control	0.119	22	0.200*
Post-test control	0.146	22	0.200*

Source: Authors

The test unveiled that the significance value of both experimental and control groups was 0.200, higher than 0.05, indicating the normal distribution of the pre-test and post-test data.

The homogeneity test on students’ nationalism character was carried out using the Levene test, with a significance level of 0.05 on the post-test results of both groups. It was performed as a prerequisite for hypothesis testing. The data are homogeneous if the significance value is higher than 0.05.

Table 2. Homogeneity Test Results

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
1.119	1	42	.296

Source: Authors

The test revealed a significance of 0.296, exceeding 0.05. Referring to the significance value in Table 2, the post-test data of both groups were homogeneous, signifying the fulfillment of a requirement of the independent sample t-test.

Descriptive Statistical Analysis

Descriptive statistics summarize and describe data briefly and informatively, providing an overview of the patterns, distributions, and characteristics of the observed data.

Table 3. Descriptive Statistics Results

	N	Min	Max	Mean	Std. Deviation
Pre-test experiment	22	23	32	28.64	2.258
Post-test experiment	22	31	39	34.27	2.164
Pre-test control	22	26	35	29.73	2.676
Post-test control	22	27	36	31.68	2.679

Source: Authors

As displayed in Table 3, the average post-test of the experimental group was 34.27, higher than that of the control group of 31.68, resulting in an average difference of 2.59. After implementing the STEM-based I-LVEP model, the nationalism character of students in the experimental group rose significantly, while students in the control group displayed constant nationalism character.

Hypothesis Testing

Hypothesis testing was carried out using a t-test (independent sample t-test) because the data were homogeneous and normally distributed, and were autonomous and unpaired. IBM SPSS Statistics 23 was deployed to determine the t coefficient in this independent sample t-test.

Table 4. Independent Sample T-Test Results

Independent Sample T-Test	t-test for Equality of Means			
	T	Df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	3.528	42	0.001	2.591

Source: Authors

Table 4 exhibits a significance value (2-tailed) of 0.001, below 0.05. The hypothesis testing was also strengthened by the t-count of 3.528, exceeding the t-table of 1.682. Hence, H0 is rejected and H1 is accepted. In other words, the STEM-based I-LVEP model influenced the nationalism character of the fourth-grade students of SDN Ngebel.

Guttman Scale Test

A questionnaire on the implementation of Pancasila Education using the STEM-based I-LVEP learning model was distributed to the experimental group. The questionnaire was established using the Guttman scale, comprising two assessment scales: “YES” (score 1) and “NO” (score 0) (Sugiyono, 2016). The questionnaire, containing 20 statement items, was distributed to 22 students of the experimental group.

Table 5. Questionnaire Results

Persentase (%)	Category
$>81.25 \times \leq 100$	Excellent
$>62.5 \times \leq 81.25$	Good
$43.75 \times \leq 62.5$	Passed Conditionally

Source: Authors

The results of the questionnaire were analyzed. The first stage of the analysis involved the use of frequency variables. Furthermore, the percentage results of the questionnaire were classified, as displayed in Table 6.

Table 6. Student Response Results

Item	Mean	Persentase	Category
1	1.00	100%	Excellent
2	1.00	100%	Excellent
3	0.91	90.91%	Excellent
4	0.91	90.91%	Excellent
5	1.00	100%	Excellent
6	0.96	95.45%	Excellent
7	0.91	90.91%	Excellent
8	1.00	100%	Excellent
9	0.86	86.36%	Excellent
10	1.00	100%	Excellent
11	1.00	100%	Excellent
12	0.86	86.36%	Excellent
13	0.96	95.45%	Excellent
14	1.00	100%	Excellent
15	0.77	77.27%	Good
16	1.00	100%	Excellent
17	0.96	95.45%	Excellent
18	1.00	100%	Excellent
19	1.00	100%	Excellent
20	1.00	100%	Excellent

Source: Authors

The analysis of the questionnaire generated a percentage of $>81.25\% \times \leq 100\%$, falling within an excellent category. It indicates that most students were delighted with learning using the STEM-based I-LVEP model. They believed that this model was highly effective and helpful, providing deep understanding and high involvement during learning. However, question 15 obtained a percentage of $>62.5\% \times \leq 81.25\%$, belonging to the good category, signifying the need for a slight improvement on several issues. Overall, the STEM-based I-LVEP model was considered viable and supportive in improving students' understanding of the material taught.

Discussion

The hypothesis testing demonstrated an increase in the experimental group, specifically from 28.64 in the pre-test to 34.27 in the post-test, indicating a rise of 5.63. Meanwhile, the control group produced a pre-test average of 29.59 and a post-test average of 31.68, depicting an escalation of 2.09. These findings imply that the STEM-based I-LVEP model was more influential than the expository or conventional model. The impact of the learning model on the nationalism character could be seen from the contrast between the averages of pre-test and post-test scores between the two groups. The expository model focuses more on conveying information. Teachers can encourage students to improve critical thinking skills by inviting them to think about national values through questions, reflections, and discussions. The nationalism character of students in the control group began to improve in the Pancasila Education due to the repetition of discussions. Conversely, the STEM-based I-LVEP model focuses more on students' skills to memorize, explore, create, and obtain the values of life,

strengthened by the Quran and Hadith. The nationalism character of students in the experimental group rose because when studying Pancasila Education, they were invited to understand, imagine, discuss, create, and explore the concept of nationalism with a technology-based presentation.

a. *STEM-Based I-LVEP Model*

The utilization of technology in learning has provided numerous critical benefits in improving the quality of teaching and learning. The STEM-based I-LVEP model accustoms students to communicate, collaborate, be creative, and think critically (Apriani & Sari, 2024). Students are more diligent, considering that learning is not restricted to reading but also to practicing. Learning resources are supported by images, videos, and illustrations, helping students to easily understand the material. This model can instill good character in students. The nationalism character of students in the experimental group expanded significantly after learning using the STEM-based I-LVEP model.

The STEM-based I-LVEP learning model highlights good values based on Islamic law (Apriani & Sari, 2024). This model teaches students to learn, experience, and practice universal values to acquire various social skills useful for facing the digital era. This model is highly beneficial for elementary school students as it is outlined and executed efficiently to assist students in understanding human behavior related to Allah, themselves, other humans, the environment, and nationality (Apriani & Sari, 2024). Students can hone Islamic values in their daily lives, allowing them to perform such values adequately. A good attitude toward learning energizes students to explore modern thoughts, deliver unique work, and boost their confidence in communicating ideas and concepts. The STEM-based I-LVEP is an elective inventive learning model (Apriani & Sari, 2024). In addition, students can apply 21 skills by combining the information, abilities, and their thoughts. STEM-based I-LVEP learning is carried out by inviting students to reflect, envision, exchange, communicate, make, compose, express themselves through art, and play with the values instructed within the concepts of science, innovation, design, and mathematics (Apriani & Sari, 2024). It is modified for learning by integrating Islamic teachings into LVEP.

LVEP is an educational program providing appreciation exercises for children, which is actualized to investigate and create 12 universal values (Tillman & Hsu, 2004), ultimately assisting in developing education values. The life value program is designed to shape, create, and fortify the individual qualities into respectable and intelligent human beings (Apriani, 2021). Kindness is the basis for forming a noble character and harmonious social relationships. Values are not only taught theoretically, but are observed, felt, and practiced (Hidayana & Apriani, 2023). LVEP teaches students to foster attitudes of caring, compassion, and social inclusion. It seeks to provide good learning, helping elementary school students explore, spread, and have universal values in everyday life (Apriani et al., 2021). It can be implemented in schools, families, and communities, offering a perspective that influences social life by emphasizing the values of experiencing everyday peace in a multicultural society (Nst & Kurniawan, 2023). Integrating LVEP into formal learning can strengthen more

meaningful and contextual character education. When students are invited to reflect on life values and relate them to real situations around them, the educational process becomes more humanistic and transformative. In the long term, this model has the potential to create a generation with a high social awareness and a commitment to living together harmoniously amidst diversity. Living values offer fundamental life values in various habits (Apriani, 2021). LVEP introduces learning integrated with positive values. Students are taught to understand and appreciate the values conveyed, allowing them to have the ability to practice LVEP values in real life independently (Apriani, 2021). LVEP is exceptionally valuable for developing the quality of character education in Indonesia; hence, producing an incredible, talented, and characterful young generation.

Great character must be instilled in children from an early age. Islamic values are the standards of living and teachings about how humans should live their lives in this world. All religious values, especially Islam, are based on the belief in the unity of God. This belief is the basis of all human life values. According to al-Ghazali, the primary goal of Islamic education is to worship the Al-Khaliq, Allah, and to always trust in Him (Asy'arie et al., 2023). Islam teaches the significance of caring for others, empathy, and humanity. These values are also the focus of LVEP as a way to foster a sense of caring and social responsibility. People from various cultural and religious backgrounds can apply to LVEP. Islamic education develops moral consciousness, bolsters faith, and offers guidelines for moral action by helping students comprehend and put Islamic teachings into practice (Guna et al., 2024). To develop moral and responsible behavior, values including fairness, integrity, courtesy, tolerance, and charity are instilled in students. LVEP can serve as a means to strengthen the sacred values contained in religious teachings, including Islam.

Islam teaches the importance of virtue, ethics, and noble morals in interacting with others. It aligns with LVEP, emphasizing the significance of developing good character and ethical behavior in education. Islamic education is utilized as an effort to create and maintain human resources to establish a total human being (*insan kamil*) in accordance with Islamic norms (Bulungo, 2023). Islamic education refers to the development, training of morals, and intelligence of children. Students are educated to have morals toward Allah, fellow human beings, and the environment. Islam teaches values such as justice, patience, and forgiveness in resolving conflicts fairly and impartially (Mehmood et al., 2023). Practicing these values will encourage constructive dialogue, mediation, and compromise to resolve conflicts in the school environment. This Islamic education encourages cooperation among humans. It is in line with the values of LVEP, highlighting the significance of collaboration, communication, and mutual support between individuals.

The Islamic values emphasized in LVEP as a foundation for building an inclusive and harmonious society are concern for others, empathy, and humanity. Islamic values must be grounded in the Quran and Hadith, serving as crucial components in shaping the positive

character and morals of students. The values of Islamic teachings are the basis for achieving happiness in this world and the hereafter (Fitriana et al., 2020). The values contained in Islamic teachings are exceptionally vital and appropriate to be connected with the use of character education in schools. Islamic values can be coordinated into learning models, one of which is LVEP. This model believes that life values can shape great ethics, demanding that teachers be positive role models for students.

This I-LVEP model employs STEM, encompassing the integrated concepts, standards, procedures, innovation, and science to establish advantageous items, forms, and frameworks (Davidi et al., 2021).

STEM intends to empower students to communicate, collaborate, innovate, be independent, and think at a higher level. The better students understand the problems and needs of people in their environment, the more likely they are to get involved and help others (Nalipay et al., 2024). STEM-based learning approaches not only provide benefits in cognitive aspects but also have a strategic role in forming students' social and national character. Through the integration of science and real-life contexts, students are encouraged to develop empathy, social awareness, and a spirit of nationalism. The benefits of STEM learning are to make strides in students' skills in four areas of science: "science, technology, engineering, and mathematics skills" (Fathoni et al., 2020). The STEM approach is exceptionally vital within the advancement of science and technology. STEM is considered a modern learning approach aiming to produce human resources with high affective, psychomotor, and cognitive qualities (Muhanditsah et al., 2023). Students learn to apply STEM to learning through various activities such as finding problems and determining solutions through group discussions, creating and testing materials with simple works, utilizing projectors to display videos and illustrative images of materials, and presenting learning outcomes using statistical forms. The STEM study can support skill development, critical thinking, and character value improvement.

b. Instilling Nationalism in Elementary School Students

Through the formation of positive character values, students will learn to respect and appreciate national values such as diversity, unity, and realize the character of nationalism. Nationalism is a political attitude with the same culture and territory as well as ideals and goals, allowing the people to have deep loyalty to the nation (Asyari & Anggraeni Dewi, 2021). Strengthening the character of nationalism can be performed through habituation, helping students become more nationalistic. Instilling the character of nationalism in schools essentially aims to build good student morality (Riska, 2020). The character of nationalism can be instilled by implementing the STEM-based I-LVEP learning model. The utilization of LVEP in learning can provide a coordinated experience as a basis for understanding the theoretical aspects of nationalism, allowing students to effectively understand the significance of the character of nationalism, specifically in lifestyle (Apriani et al., 2017) The use of STEM in everyday life is reflected in various aspects, such as the use of more efficient mathematical applications. Moreover, the integration of STEM in learning can make steps in imaginative,

basic, and explanatory thinking skills, and unravel genuine issues in social life (Dewa et al., 2021). Students often work in teams to complete complex projects. This collaboration provides opportunities for them to learn to accept differences, appreciate diversity, and develop a sense of solidarity deemed crucial for strengthening unity and nationalism. This nationalism character is the embodiment of five interrelated central values.

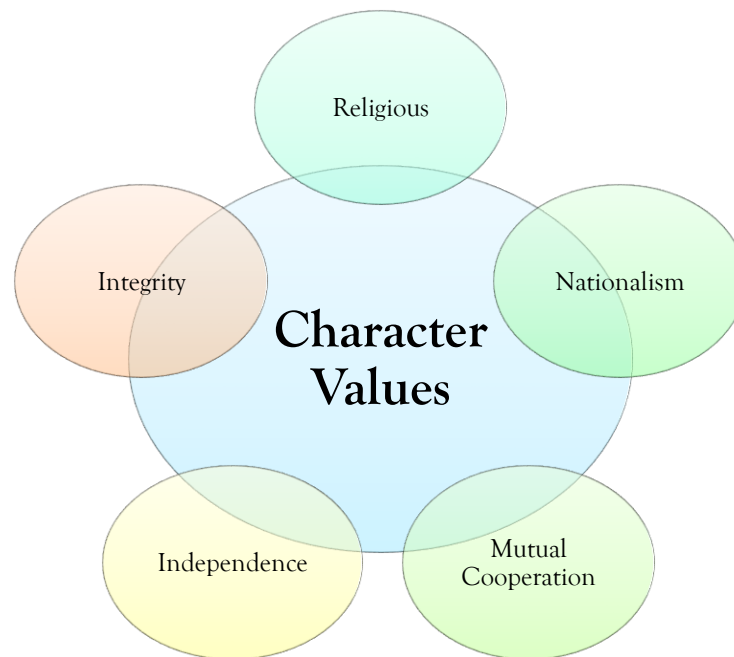


Figure 1. The Nationalism Character

Source: (Permendikbud, 2018)

These findings align with the study by (Rusiyono & Apriani, 2020), explaining that nationalism, such as helping each other, working together, and being honest with teachers and friends, needs to be fostered because they require self-control and demand that others prioritize self-interest for the sake of others. The character of nationalism should be instilled from an early age, as clarified in Jumardi's research (2022) that the role of teachers in fostering students' cherish for their country must be realized in classroom learning and understanding the mindset of students' patriotism.

c. The Effect of the STEM-Based I-LVEP Model on Instilling Nationalism in Elementary School Students

The analysis results revealed that the utilization of the STEM-based I-LVEP learning model impacted on expanding the nationalism of students. It was proven to foster a sense of tolerance for differences and reflect a sense of love for the country. The model combines Islamic religious values in LVEP, allowing it to be adopted to teach students about respecting and appreciating others. Students are taught to maintain an attitude of solidarity, live in harmony,

and demonstrate flexibility to others. The STEM-based I-LVEP model also teaches students to emulate the characters of Indonesian heroes and actualize them in daily life.

CONCLUSION

This study examined the influence of the STEM-based I-LVEP model on the nationalism character instilled in fourth-grade students of SDN Ngebel. The analysis results proved the influence of the STEM-based I-LVEP learning model in instilling nationalism character. This influence was demonstrated by the t-test result, generating a t-count of 3.528, exceeding the t-table of 1.682. The model could foster a sense of tolerance toward diversity and reflect a sense of love for the country. It could teach students to have good morals, practice the teachings of the Quran and Hadith by behaving politely, respecting differences, upholding an attitude of unity, living in harmony, and giving freedom to others.

This study is crucial since the character of nationalism needs to be instilled early on, especially in elementary school, to create a generation that loves its country, appreciates diversity, and upholds national values. Amidst the challenges of globalization and the rapid flow of information, character education through an innovative approach, such as the STEM-based I-LVEP model, is a relevant strategy to build students' character holistically. However, this research has several limitations as it was only conducted in one school with a limited number of samples, preventing the generalization of the results. In addition, the measurement of nationalism character relied on subjective observation and questionnaire instruments, making it highly dependent on the perceptions of respondents and researchers.

Accordingly, further research is recommended to include several schools with more diverse backgrounds to enhance external validity. Mixed methods can also be adopted to obtain a more comprehensive picture of the influence of the STEM-based I-LVEP learning model on various aspects of student character, not only nationalism but also other characters such as independence, cooperation, and integrity.

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