

Living Lab Implementation in Civic Education to Internalize National Spirit and Responsibility Character

Edwin Nurdiansyah^{1✉}, Sapriya², Cecep Darmawan³, Aim Abdulkarim⁴, Dedi Kurniawan⁵

¹Faculty of Teacher Training and Education, Universitas Sriwijaya, Indonesia

²⁻⁴Faculty of Social Science Education, Universitas Pendidikan Indonesia, Indonesia

⁵Faculty of Education, University of Georgia, Athens, United States of America

DOI: 10.23917/ijolae.v7i3.8505

Received: January 30th, 2025. Revised: June 20th, 2025. Accepted: June 28th, 2025

Available Online: September 1st, 2025. Published Regularly: September, 2025

Abstract

Civic Education learning still tends to be textual and less contextual, making it less interesting and ineffective in building students' character. This study explores the effectiveness of implementing the living lab learning model in shaping the character of national spirit and responsibility of students. This study used a quasi-experimental design with pre-test, post-test assessments and questionnaires which involved 232 Sriwijaya University students as research respondents. Analyzed using the N-Gain value and Pearson correlation. The results from implementation of the living lab indicated a moderate improvement in students' character, particularly in collaboration, social involvement, and sensitivity to national issues. Based on statistical analysis, a significant correlation was obtained between the implementation of this learning model and the development of students' character (p -value < 0.05). This shows that the living lab approach allows learning to be more contextual and collaborative, as well as provides real experiences that are relevant to build students' character in facing the challenges of the 21st century. Longitudinal studies to evaluate the sustainability of the impact of this model in a long-term context are recommended for future research.

Keywords: character education, citizenship character, collaborative learning, holistic learning, innovation in learning models, lab learning model, learning model, responsibility character

✉Corresponding Author:

Edwin Nurdiansyah, Faculty of Social Science Education, Universitas Pendidikan Indonesia, Indonesia
Email: edwin@upi.edu

1. Introduction

The learning process that is often carried out in Civic Education (PKn) lectures can be said to have not run optimally. Previous research results from (Zuriah, 2021) stated that the learning PKn method in higher education are considered boring by most students, because most of the material is delivered through lectures and discussions that are not focused. Then added to the form of assignments that are not in accordance with students' interests so that they feel burdened when working on them. Then research from

(Nelrizawati, Herpratiwi & Adha, 2022) which focuses on PKn at the high school level shows that students generally learn by memorizing what can be noted from the teacher's explanation or from books. If they have memorized it, then students feel that it is enough and the teacher also does not stimulate student activities optimally in teaching. Research from (Istianah, Irawan & Mas'ud, 2024) revealed that PKn teachers have an important role in shaping students' character and improving the quality of learning in the classroom, therefore if PKn learning can run

optimally, teachers can teach values such as responsibility, cooperation and concern for the community to students more effectively.

Because PKN learning process not run optimally, thus making become a field of study that attracts students to study it. The material tends to be textual and ignores the contextual in the process of compiling their knowledge. In addition, PKN teachers, both teachers and lecturers, still dominate the classroom stage while students are like spectators watching a show. This situation occurs due to the paradigm that students must master a lot of civics material in order to be said to be successful. This process is considered to be achieved well if students have good memorization of the material given by educators, not in terms of citizen skills or the birth of good moral character. As a result, the form of learning that is carried out has not been able to explore the potential of students, has not provided a holistic learning experience to students, and has not been able to build good character in them.

When there is a lot of moral degradation, many people immediately think of civics and religious education at formal education levels such as schools or universities (Rakhmah et al., 2024). The concept that is widely developed is that when moral degradation is rampant, there is something wrong with civics and religious education, because these two subjects are considered the most important in providing good values and morals to each individual. Civics education does have the aim of fostering morals, providing reasoning for the concept of norms and realizing the character of students with the hope that it can be implemented in everyday life so that there will be behavior that is faithful and pious to God, has a sense of humanity, is civilized and prioritizes common interests (Djahiri, 1995), civics is also considered as an education that is carried out in order to shape the personality

of the younger generation so that it is in accordance with the noble values and culture of the nation (Pratomo, 2016) so that there is indeed a close relationship between civics and moral education because they have the same essence, namely forming a human person whose behavior is in accordance with the values and morals that develop in society or what is now widely known as the narrative of citizens with Character (Rachmawati et al., 2024).

A person who acts in accordance with applicable values, morals and norms is now often said to be a person of character, this is in line with Lickona (2012) who defines character as the possession of good things, then Komalasari & Saripudin (2022) said that individual character will be seen in behavior in life. Dianti (2014) further expands the scope of character by saying that a person of character is one who is able to do good things, not only to fellow human beings but also to the environment and even his country, because Cicero in Lickona (2012) emphasized that in the character of citizens lies the welfare of the nation. Ideally, all citizens have the character to always show good things and prioritize the public interest over the interests of their groups and groups. The Indonesian Ministry of National Education (2010) identified 18 values of national character education, namely religious, honest, tolerant, disciplined, hard work, creative, independent, democratic, curiosity, national spirit, love of the homeland, respect for achievement, friendly, love of peace, love of reading, care for the environment, care for society and responsibility. Then the Indonesian Heritage Foundation (Megawangi, 2004) puts forward 9 character values, namely love for God and all his creations, independence and responsibility, honesty/trustworthiness, respect and courtesy, generosity; helpfulness; mutual cooperation, self-confidence,

leadership, kindness and humility, and tolerance. All of these character values certainly do not immediately arise in all citizens, but a consistent internalization and habituation process is needed so that these character values emerge in the behavior and actions of a citizen.

In the scope of character in students, there are quite worrying facts from the research conducted by [Tanshzil \(2023\)](#) entitled Development of Anti-Radicalism Value Project Learning Model to Strengthen Young Citizens' Commitment. From the 400 respondents who were the students from various faculties at the Indonesian Education University (UPI), 12.7% agreed that acts of violence in the name of religion were normal, then 26.5% agreed that fighting for ideology through violence was a must, then there were 19.6% who felt that Pancasila was currently no longer relevant as a state ideology and 13.1% agreed that Pancasila should be replaced with another ideology. The results of this study indicate that students who have received Civic Education longer than students in schools are still not free from radical ideologies and are not in accordance with the character expected to grow in citizens.

This can be influenced by many factors, one of which is the weakness of PKn in presenting character education, namely the character of national spirit from all citizens. Therefore, [Priyambodo \(2017\)](#) stated that the character of national spirit is currently important to continue to be developed considering that radicalism, especially in the context of religion, still appears and is a threat to the unity of the Indonesian nation.

In addition to the character of national spirit, it is also important for education in higher education to build a character of responsibility in students. Corrupt behavior is now emerging in many students (ACLC KPK: 2022) wrote seven corrupt behaviors in

students, namely (1) cheating (2) skipping lectures and asking for absences (3) always being late (4) copying and pasting friends' assignments (5) manipulating LPJ (6) giving gifts to lecturers and (7) falsifying scholarship data. A real example is the misuse of the Smart Indonesia Card (KIP) for students at Diponegoro University, it is suspected that KIP recipients misused the assistance, in addition it is suspected that they are also not the right people to receive the assistance because they come from economically well-off families ([Yaputra, 2024](#)). Then the case of Airlangga University students majoring in Management who were suspected of plagiarizing fellow students' assignments ([Widiyana, 2024](#)) also shows irresponsible behavior in students. Some of these case examples show that irresponsible behavior still sticks in some students, which is why it is important to always hone their responsible character through existing learning so that they can consistently do good and responsible behavior in their daily lives.

In line with the research results above, a study conducted by distributing questionnaires to 22 lecturers teaching Civics courses and 452 students taking Civics courses at Sriwijaya University (Unsri), as well as observations of 8 lecture classes, found that the character of national spirit and character of responsibility in Sriwijaya University students is quite good. Among them are (1) being proud of Indonesia's national identity, (2) respecting the diversity of ethnicities and religions that exist, (3) providing assistance regardless of ethnic or religious differences, (4) attending lectures seriously, (5) submitting assignments on time, and (6) participating in maintaining lecture facilities and infrastructure including classrooms. This claim is supported by the statement of 45.5% of lecturers teaching the course who answered that their students often

showed an attitude of respecting the diversity of ethnicities and religions in the classroom. Then, 45.5% of lecturers also stated that students submitted assignments on time. However, the character of national spirit and the character of responsibility of students at Sriwijaya University still has shortcomings. If left alone, it is not impossible that it will grow bigger and become one of the weak points of this nation in the future.

The aspect that still needs to be improved related to the character of national spirit is students' concern for national issues, because there are still 5.3% of students who rarely feel anxious seeing various national problems and even 2% of students never feel anxious at all. The same thing was revealed from the questionnaire data filled out by lecturers, where it was stated that 22.7% of lecturers stated that students rarely and 13.6% of lecturers stated that students never showed their anxiety when discussing various national problems. In line with these data, observations also found that there were still quite a lot of students who were not enthusiastic and even tended not to care when discussing national issues and problems, for example when discussing political dynamics in Indonesia. In addition, the social contribution of students, which is also part of the character of national spirit, data obtained 12.6% of students stated that they rarely participated in social community activities. This indicates that although the character of national spirit already exists, its implementation in real actions still needs to be improved.

In the character of responsibility, one aspect that needs to be fixed is related to student participation in student organizations. As many as 14.6% stated that they rarely and 8% stated that they had never been involved at all in student organizations either on or off campus. From the lecturer's perspective, an

important thing to fix regarding the character of responsibility in students is regarding plagiarism, as many as 27.3% of lecturers feel that students still rarely try to make original assignments and avoid plagiarism. From observation data, students have tried to fulfill their responsibilities as students in the context of lectures, such as attending lectures on time, doing assignments well, but in some classes with many students and spacious rooms, there are still students who seem less serious in attending lectures. Based on the existing data, it can be concluded that there are still weaknesses in Unsri students regarding character, both the character of national spirit and the character of responsibility.

The process of internalizing character values, one of which can be done by implementing educational activities that are able to present interaction, collaboration and involvement of students who are citizens. Because with this, an attitude of mutual understanding, a democratic attitude and an attitude of tolerance will be born in them. [Zubaedi \(2012\)](#) said that character education is an effort that is deliberately designed in order to foster virtue in human life so that it leads to increasing the quality of society. In designing character education for students, learning instruments can adopt a living lab approach.

Living Lab has a symbolic meaning in a broader and more comprehensive process to facilitate collective-collaborative action between parties in their efforts to find solutions and present innovation. Living Lab can be characterized as a practice-based organization that facilitates and encourages innovation by studying, testing and developing based on open collaborative action. [Hagy \(2017\)](#) describes living lab as a method to overcome problems in people's lives through a combination of knowledge approaches from science with direct

involvement in people's lives themselves. Then [van Geenhuizen \(2018\)](#) describes living lab as an innovation that can create collaborative learning from all parties involved in it. By adapting the concept of living lab in learning, it will reduce the gap between the concepts learned in the classroom and the real phenomena that exist in people's lives. Through living labs, students are not only driven by science but also accustomed to having real involvement as part of the obligations of citizens.

Citizen engagement basically refers to attitudes, behaviors, knowledge, and skills aimed at improving society and stemming from an interest in improving the common good ([Youniss et al., 2003](#)). Thus, for ([Lerner, 2004](#)) community engagement can be considered as prosocial behavior, which is expressed as a relationship with the community, a commitment to improving society, and actions to help the community. Thus, the active involvement of citizens in their lives will be able to hone the characters in themselves which in fact have been possessed since birth as a gift from God Almighty according to their nature as social beings. Individuals who have character will love good things very much and will behave well in order to realize a better life. These individuals will always try to improve things that are still considered wrong in the life of society, this is where the character they have will be very visible.

Although many studies offer steps to realize the character of citizens through innovation in civic education learning models, there has been no research in the scope of learning model innovation that investigates how the concept of living labs that emphasizes collaboration can influence character development in students. Understanding how character can develop through collaborative learning can be an

alternative in implementing character education. By analyzing the challenges in realizing the character of citizens and how the process of learning citizenship education can affect it, this study aims to explain how the difficulties in realizing character in students can be overcome by using learning based on the living lab approach. The practical implications of this study are very important for educators in citizenship education courses to help them in their efforts to realize the character of students. The findings of this study offer new knowledge in refining the collaborative learning approach to ensure that the interaction is able to help realize the character of students. Finally, this study will provide recommendations on the implementation of living labs in learning models to realize the character of students.

By analyzing the challenges in realizing the character of citizens and how the process of learning citizenship education can affect it, this study aims to explain how the difficulties in realizing character in students can be overcome by using learning based on the living lab approach. The practical implications of this study are very important for educators in citizenship education courses to help them in their efforts to realize the character of students. The findings of this study offer new knowledge in refining the collaborative learning approach to ensure that the interaction is able to help realize the character of students. Finally, this study will provide recommendations on the implementation of living labs in learning models to realize the character of students.

2. Method

This type of research is quasi-experimental, [Arikunto \(2006\)](#) stated that quasi-experimental is an experimental research conducted on only one group called the experimental group without any control

group as a comparison. The design used is one group pre-test-post-test design by comparing the pre-test results with the post-test results to measure the development of student character after attending lectures that implement the concept of living lab in its learning model.

Here are some important points in this study,

- a. This study took place at the center of personality development courses of Sriwijaya University.
- b. The population in this study were 232 students taking the citizenship education course divided into 8 lecture classes with the following details: (1) Laws, (2) History Education, (3) Public Health, (4) Information System, (5) Accounting, (6) Pancasila and Citizenship Education, (7) Indonesian Language and Literature Education, and (8) Economic Education.
- c. The data was collected through pre-test and post-test. Then, to see the relationship between the living lab learning model (variable x) and the manifestation of student character (variable y) a questionnaire was used.

- d. The data analysis technique was through quantitative analysis which was carried out to analyze the test results and questionnaires given in order to measure the character of national spirit and responsibility of students. By using gain value analysis, the potential impact of the implementation of the learning model using the living lab approach on the manifestation of student character during the trial will be seen. To obtain N-gain, the formula used is:

$$N \text{ gain} = \frac{S \text{ posttest} - S \text{ pretest}}{S \text{ maximum} - S \text{ pretest}}$$

With N gain is the normalized gain of pretest and posttest, S is the maximum (ideal) of pretest and posttest, S post is the posttest score while S pre is the pretest score. For the N gain criteria, it can be classified according to (Hake, 1999) as follows,

Table 1. N Gain Value Criteria

Value	Category
$N \text{ gain} \geq 0,7$	High
$N \text{ gain } 0,7 > N \text{ gain} \geq 0,3$	Moderate
$N \text{ gain} < 0,3$	Low

Based on Table 1, it can be seen that the level of learning improvement is classified into three categories: high, moderate, and low. An *N-Gain* value of ≥ 0.7 is categorized as high, indicating that the learning intervention applied provides a significant improvement in students' understanding. Meanwhile, an *N-Gain* value in the range of $0.7 > N \geq 0.3$ is categorized as moderate, suggesting that there is an improvement although it is not yet optimal. On the other hand, an *N-Gain* value of < 0.3 is categorized as low, showing that the

improvement in students' learning outcomes remains very limited. These criteria serve as a benchmark to evaluate the extent to which a learning model is effective in enhancing students' competencies.

Furthermore, to gain a more comprehensive understanding of the effectiveness of learning outcomes, the *N-Gain Effectiveness Interpretation Category* as presented in Table 2 is employed.

Table 2. N-Gain Effectiveness Interpretation Category

Percentage	Interpretation
<40	Not Effective
40-55	Less Effective
56-75	Quite Effective
>76	Effective

This table explains that the effectiveness of learning is not only assessed by the magnitude of the *N-Gain* value but also interpreted in terms of percentages. A percentage of < 40% is categorized as “not effective,” 40–55% as “less effective,” 56–75% as “quite effective,” and values above 76% indicate that the learning process is “effective.” Thus, this interpretation provides a clearer perspective on the extent to which the applied learning model contributes to improving students’ abilities in a meaningful way.

Then, the data collected through the questionnaire will be tested for correlation and regression between the living lab learning model (variable x) and the manifestation of student character (variable y). This is done to measure how big the relationship and influence are between the variables contained in this study. In this study, the statistical data analysis used is descriptive statistical analysis. This is done because this form of analysis can find relationships between

variables through correlation analysis, provide predictions with regression analysis and make comparisons between the average sample data and the population. However (Sugiyono, 2015) states that in descriptive statistics, correlation analysis and regression analysis do not need to be tested for significance because the researcher does not intend to make generalizations. The correlation coefficient used in this study aims to measure the relationship between two variables, namely the living lab learning model and student character. In using this correlation, there is no question of dependency so that one variable does not have to depend on the other variable, but the variable being operated must still have a relationship or be related. The correlation coefficient is an index or number used to measure the closeness between variables. Guidelines for interpreting the correlation coefficient are as follows:

Table 3. Interpretation of Correlation Coefficient

Coefficient Interval	Level of Correlation
0,00 - 0,199	Very Low
0,20 - 0,399	Low
0,40 - 0,599	Moderate
0,60 - 0,799	Strong
0,80 – 1,000	Very Strong

(Priyatno, 2016)

Based on table 3 the strength of the correlation between two variables can be classified into five categories. A coefficient interval of 0.00–0.199 is categorized as “very low,” indicating that the relationship between variables is almost negligible. A range of 0.20–

0.399 is categorized as “low,” showing a weak but still identifiable relationship. A coefficient of 0.40–0.599 is categorized as “moderate,” which implies a noticeable and meaningful relationship between variables. Meanwhile, a coefficient between 0.60–0.799

is considered “strong,” reflecting a high degree of consistency in the relationship. Finally, a coefficient of 0.80–1.000 is categorized as “very strong,” signifying a close and highly consistent relationship between the examined variables. These classifications are useful for interpreting the extent to which

independent variables influence dependent variables in this study.

To complement this interpretation, table 4, interpretation of R Value Correlation Coefficient According to Guilford, provides an alternative guideline for assessing the strength of correlations.

Table 4. Interpretation of R Value Correlation Coefficient According to Guilford

Coefficient Interval	Level of Correlation
0,00 - 0,20	No Correlation
0,21 - 0,40	Low
0,41 - 0,70	Moderate
0,71 - 0,90	High
0,91 - 1,00	Very High

(Susetyo, 2010)

Based on table 4, the correlation coefficient can be classified into five categories. A coefficient interval of 0.00–0.20 indicates “no correlation,” suggesting that the relationship between the variables is negligible. A value of 0.21–0.40 shows a “low” correlation, meaning that the relationship exists but is relatively weak. A coefficient of 0.41–0.70 is categorized as “moderate,” which reflects a more meaningful and noticeable association between variables. Meanwhile, a coefficient of 0.71–0.90 indicates a “high” correlation, demonstrating a strong linear relationship. Finally, values between 0.91–1.00 represent a “very high” correlation, which indicates an extremely close and consistent association between the examined variables. This classification helps determine the strength of the relationship between the learning model and the

development of student character measured in this study.

Furthermore, to strengthen the interpretation of correlation results, table 5, Interpretation of the Value of the Determination Coefficient According to Guilford, provides a guideline for assessing how much the independent variable contributes to explaining the dependent variable. In this framework, a determination coefficient greater than 81% indicates a “very high” contribution, 50–81% is considered “high,” 17–49% is “moderate,” 5–16% is “low,” and less than 4% is categorized as “very low.” This interpretation is important because it not only shows the existence of a relationship but also explains the magnitude of the influence that one variable exerts on another within the context of this research.

Table 5. Interpretation of the Value of the Determination Coefficient According to Guilford

Interval Koefisien	Level of Correlation
>81%	Very High
50 – 81%	High
17 – 49%	Moderate
5 – 16%	Low
<4%	Very Low

(Rakhmat, 2001)

3. Result and Discussion

The effectiveness of the living lab learning model in realizing the character of national spirit and student responsibility is measured by using the n-gain score calculation. This calculation is carried out to measure changes and differences in the results of the values

between before using the living lab learning model (pretest) and after using the living lab learning model (posttest). The results of the calculation are presented in the following table,

Table 6. Descriptive Results of N-Gain Score

Study Program	Pretest Average	Post Test Average	N-Gain Score	N-Gain Score (%)	Category	Interpretation
Laws	73,3	76,7	0,5	51,7%	Moderate	Less Effective
History Education	72	75,3	0,4	41,5%	Moderate	Less Effective
Public Health	72,5	76,8	0,6	57,1%	Moderate	Quite Effective
Information System	76	78,4	0,6	58,9%	Moderate	Quite Effective
Accounting	73,2	77,7	0,6	65,9%	Moderate	Quite Effective
Pancasila and Citizenship Education	76	78,5	0,6	62,5%	Moderate	Quite Effective
Indonesian Language and Literature Education	74	77,6	0,6	59,4%	Moderate	Quite Effective
Economic Education	73,3	77	0,6	56,5%	Moderate	Quite Effective

(source, processed by researchers: 2024)

Based on the calculation results in table 6, it can be seen that the living lab learning model is categorized by the N-Gain score into the fairly effective category, although there are two classes whose results are stated to be less effective. This shows that this learning model has quite good potential in realizing character in students, especially in the character of national spirit and responsibility.

To find out the relationship between variables, namely the implementation of the living lab learning model (variable x) with the realization of the character of national spirit and responsibility of students (variable y), a simple statistical test was carried out in the form of a correlation test and a regression test, the results are presented below,

Correlations			
		X	Y
X	Pearson Correlation	1	.597**
	Sig. (2-tailed)		<.001
	N	215	215
Y	Pearson Correlation	.597**	1
	Sig. (2-tailed)	<.001	
	N	215	215

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 1. SPSS Results on Correlation Tests between Research Variables

Based on Figure 1, the significance value is <0.05 ($0.001 < 0.05$), which indicates that there is a statistically significant correlation between the implementation variable of the living lab learning model (x) and the student character development variable (y). The statistical test results show that the significance value of 0.001 is much smaller than the critical threshold of 0.05, so the relationship between the two variables is not coincidental but meaningful in the context of the study. Furthermore, the Pearson Correlation coefficient of 0.597 falls within the moderate correlation category, suggesting

that the implementation of the living lab learning model has a fairly strong influence on student character development. This means that improvements in the application of the living lab learning approach are positively associated with better outcomes in students' character formation. Therefore, it can be concluded that there is a significant linear relationship of 0.597 between the implementation of the living lab learning model and the development of student character.

Coefficients ^a									
Model	Unstandardized Coefficients			Standardized Coefficients Beta	t	Sig.	Correlations		
	B	Std. Error					Zero-order	Partial	Part
1	(Constant)	44.612	4.308		10.357	<.001			
	X	.529	.049	.597	10.849	<.001	.597	.597	.597

a. Dependent Variable: Y

Figure 2. SPSS Results on Coefficients between Research Variables

Figure 2 shows a significance value of <0.05 ($0.001 < 0.05$), which means that the variable of the implementation of the living lab learning model (x) has an effect on the variable of student character development (y). The obtained significance value of 0.001 is far below the standard threshold of 0.05, thus strengthening the evidence that the correlation

between the two variables is not accidental, but statistically meaningful. This result confirms that the application of the living lab learning model provides a real contribution to shaping and improving students' character, including aspects such as responsibility, collaboration, creativity, and problem-solving skills. In quantitative research, a significance

value less than 0.05 generally indicates the acceptance of the proposed hypothesis, and therefore, in this study, the hypothesis stating that there is an influence between variables x and y is accepted. These findings provide

strong empirical support that living lab-based learning can be considered an effective educational approach to foster student character development.



Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.597 ^a	.356	.353	6.905	1.533

a. Predictors: (Constant), X
b. Dependent Variable: Y

Figure 3. Model Summary

Based on Figure 3, the R number obtained is 0.597, meaning that the correlation between the implementation variable of the living lab learning model (x) and the student character development variable (y) is 0.597. This means that there is a close relationship because the value is close to 1. Then, the R^2 value is also obtained at 0.356, meaning that the percentage contribution of the implementation variable of the living lab learning model (x) to the student character development variable (y) is 35.6%. While the remaining 64.4% is influenced by other variables that were not tested in this study.

The statistic results described above, it can be seen that there is a correlation between the implementation of the living lab learning model and the development of character in students. Then between the two variables there is also a fairly strong influence. Thus, it can be seen that the implementation of learning that implements the living lab approach in its learning model can improve character in students. Quantitatively, there was a significant improvement in students' pre-test and post-test results after implementing the living lab learning model. The post-test results showed an increase in scores across different classes, including

Public Health (increased by 4.3 points), Information Systems (increased by 2.4 points), Accounting (increased by 4.5 points), Civic Education (increased by 2.5 points), Indonesian Language and Literature Education (increased by 3.6 points), and Economics Education (increased by 3.7 points). These findings indicate that the implementation of the living lab learning model effectively supports the development of students' national spirit and responsibility.

The effectiveness of the learning model can be observed through the development of student activities, lecturer activities, and the increase in scores between the pre-test and post-test. The assessment results of both lecturer and student activities in lectures showed significant progress. For example, during the learning process, students engaged in activities to create innovative products aimed at addressing issues that were the focus of the course, such as the declining appreciation for local South Sumatra cultures and social issues that pose potential threats to national resilience.

Through collaborative projects with relevant stakeholders, students working in groups, developed various innovative initiatives, including posters, banners, videos, podcasts, public awareness campaigns, and

even a porridge distribution project for kindergarten students.



Figure 1. The Green Bean Porridge Distribution Project Carried out by Students in Collaboration with the Community Health Center (Puskesmas)

Civic Education (PKn) lectures based on collaborative projects between students and relevant stakeholders, as seen in the living lab learning model, serve as a means to enhance students' communication and collaboration skills. Initially, students were less enthusiastic and tended to be passive in Civic Education classes, which limited their understanding and made learning less contextual. However, through the living lab learning model, which involves collaborative projects with external stakeholders, students are empowered to learn Civic Education concepts more contextually, engage in collaborative action, and gain direct field experience. This model encourages critical thinking on social issues and enables students to take real action in addressing societal challenges.

Through collaborative activities in an effort to solve problems that are the main characteristics of the living lab approach, the character of national spirit and responsibility emerges in students. This is where the important role of collaborative learning based on real problems such as those found in the living lab can be seen to support the realization of good characters in a person.

There are two different sides in viewing the collaborative approach when adapted for the problem-solving process. On the one hand, viewing the collaborative approach by involving many parties in problem solving is prone to causing conflict and slow decision-making. With collaboration, there will be more demands due to the various interests that exist so that it is not necessarily successful and successful. In collaboration, differences in attitudes often arise which cause smaller groups to be considered more effective in solving problems (Mouffe, 1999; Johnston et al., 2011; Stone, 2015; Graesser et al., 2017; Bjärstig & Sandström, 2017; Zhan et al., 2022).

However, the problem-solving process is considered to be better if the innovation & solutions produced are the result of collaborative work from many parties. Social innovation will be created when society is empowered collaboratively, with this, a win-win solution is created. Synergy between stakeholders will create diversity of potential and provide benefits from their respective fields so that they can solve complex problems. A collaborative approach is very relevant when facing problems that require multidisciplinary understanding in an effort to find solutions (Higgins & Klein, 2011; Schacter et al., 2012; Compagnucci & Spigarelli, 2020; Rivera & Savage, 2020; Chapagain & Mikkelsen, 2023).

Involvement and participation from various parties with diverse backgrounds is an important point in the context of collaboration. With direct involvement and participation, textual knowledge will become contextual, and will have a direct impact on real life. Academics can contribute their perspectives. Practitioners and government parties will share their experiences. Then, the community can be involved in providing their ideas. If all of these has been

implemented, the basis for solving problems and the presence of solutions will be deeper and more comprehensive.

In fact, collaboration and partnership are the basic things needed to live a 21st century life. [Griffin, McGaw and Care \(2009\)](#) stated that the 21st century skills needed are (1) creativity and innovation, (2) critical thinking, problem solving, decision making, (3) learning to learn, (4) communication, (5) collaboration, (6) information literacy, (7) ICT literacy, (8) citizenship, (9) life and career, (10) personal and social responsibility. Therefore, 21st century education must be able to accommodate these things. Creating a 21st century education school requires collaborative partnerships in order to create a link and match between what is obtained in formal school education and what will be found later in real life.

Citizens who have been educated and are able to adapt the spirit of collaboration will certainly provide many benefits to their country. Their mentality and character will contribute to the progress of the country, because this is the key to the establishment and operation of the nation state ([Prayitno & Manulang, 2011](#)). Therefore, citizens need to get an education, but what needs to be remembered is not just an education that provides textual material, but it must be an education that provides provisions for living life contextually. As a result, citizens who are competent in knowledge and capable in their involvement in national life will be formed.

Adapting the Living Lab approach in learning is expected to be able to provide more contextual knowledge to students, in addition it is also expected to be able to arouse a sense of social sensitivity accompanied by the ability to be directly involved in community life. That is why the living lab as a learning model based on the

principles of collaborative learning models and problem-solving learning models through problem-based learning and project-based learning is a conceptual model that is considered appropriate in efforts to build the character of a citizen. This is in line with the opinion of ([Adomssent et al., 2007](#); [Wiek et al., 2014](#)) who stated that problem-based and project-based learning also emphasize collaborative learning and stakeholder involvement to overcome complex social problems. Then this also accommodates the student-centered approach which requires teachers to no longer dominate the classroom stage and to position their students more as partners in constructing knowledge. Presenting collaborative aspects in efforts to solve social problems is able to present various perspectives in decision-making so that more holistic, comprehensive solutions will be born, and will also be able to produce character. One of the prerequisites for the emergence of efforts to solve social problems is the desire to participate from the parties involved even though the problem may not be directly related to their lives.

A diverse country like Indonesia certainly needs citizens who understand differences and prioritize tolerance so that unity can be realized even in differences. Citizens who are intolerant and do not respect differences will very likely make the nation state not last long, because if the state fails to develop civic nationalism for every citizen, ethnic social ties will easily emerge ([Mulyono, 2022](#)). Thus, primordialism will widen and unity as a nation state will fade. Therefore, it is not a guarantee that abundant natural resources, strong financial resources and qualified skills will be able to support the existence of a nation state. Social capital is needed in the form of human resources or citizens who have a strong character, uphold tolerance and a spirit of cooperation and

collaboration so that a nation state can stand strong. The key to building this social capital is through education that focuses on developing civic competence.

In the socio-cultural context, PKn must also prioritize the profile of the realization of Indonesian society that understands and is aware of the many differences that exist, and these differences are not barriers to collaboration in efforts to resolve citizen problems. Therefore, in addition to the curriculum, it is also necessary to develop socio-cultural aspects through a community-based approach in order to be able to help achieve the goal of the birth of citizens who respect multiculturalism. Therefore, the presence of civic education in the socio-cultural context aims to help children learn about the social life in which they live, learn about social reality and to develop the knowledge, attitudes, and skills needed in community life (social studies mission).

Educators in the 21st century must be able to develop students' abilities to think critically, analyze information, be communicative, collaborative and able to use technology to overcome various existing problems so that future human resources must receive more serious attention through a quality education process where this will only be obtained if educators already have adequate skills (Wibowo, 2012; Surya, 2016; Tridiana & Rizal, 2020). Civic education as an education provided so that citizens have knowledge and skills that are in accordance with the development of the times. This must accommodate these 21st century skills in the content and learning process so that the expected output and outcome in the form of intelligent and good citizens who are able to adapt to the development of the times can be realized.

Living lab which is an open innovation ecosystem by combining various

stakeholders related to the goal of creating better solutions that are relevant to real needs is closely related to the concept of collaboration and community. These two concepts make living labs run effectively, so it can be said that both are important elements in running a living lab. Collaboration in living labs involves various stakeholders who work together to create, test and implement innovative solutions. Parties involved in collaboration in living labs include government, academics, practitioners and the community. In collaboration, more comprehensive innovations will be created and pay attention to sustainability aspects. Collaboration in living labs is based on the principle of inclusivity, where each stakeholder has a role and contribution based on their knowledge and experience. According to (Budweg et al., 2011) various stakeholders can build collaboration in living labs that focus on innovation projects. The collaboration carried out can produce new perspectives in responding to a context so that it can make the perspective more comprehensive and holistic, thus the solutions and innovations produced can have a stronger basis for development.

United Nations, Educational, Scientific and Cultural Organization (UNESCO) in Laksana (2016) stated that there are four pillars of learning, namely (1) learning to know, (2) learning to do, (3) learning to be and (4) learning to live together, these four pillars then become the foundation and form a mindset to compile and design educational goals to be implemented. The four pillars of UNESCO indicate that education has a large scope and quite heavy tasks, where education must be able to create a generation that has high intellectual, noble morals, respects differences and has the ability to be involved in providing solutions to existing problems

so that the education implemented must be able to present the four pillars in order to create a complete individual. [Nurihsan \(2016\)](#) defines education as an effort to develop personal quality and build national character based on religious, philosophical, psychological, socio-cultural and scientific and technological values. Then Whitehead (1947) in [Nurihsan \(2016\)](#) stated that the essence of education is that it should be religious, that is why it is important to realize that education is not only a realm that exists in schools or higher education but education also includes the realm of daily life starting from the closest family to the wider community. Finally, the main goal of education can be achieved, one of the points of emphasis of which is the birth of character.

Character education is expected to be able to equip individuals with good things, present virtues and further elevate the status of humans as God's creatures. [Zubaedi \(2012\)](#) said that character education is an effort that is deliberately designed in order to foster virtue in human life so that it leads to an increase in the quality of society. Then [Mustakim \(2011\)](#) explained that through character education which contains internalization of traits, students will be created who are able to become adults according to existing cultural values. That is why [Komalasari & Saripudin \(2022\)](#) emphasized that character education is not only about teaching what is right and what is wrong, but also must instill good habits so that they understand what is right, are able to feel good values and are used to doing good deeds.

Education should provide awareness and ability for an individual to face the future, so that their behavior and character are in accordance with the values, norms and rules established in society. [Suhartono \(2009\)](#) stated that the main activities of the school

education system are essentially (1) to foster students' awareness of existing and future life problems (2) to form abilities in the form of skills and abilities to be able to overcome every problem that can be addressed appropriately both now and in the future. Education is not just listening, recording and repeating it but education must produce individuals who have the awareness to achieve freedom. [Freire \(1970\)](#) criticized the form of education that is unable to provide awareness and provide freedom, he said that it is a bank-style education where teachers are like saving and students are like their piggy banks. This type of education model will not provide a good relationship between teachers and students, there is no room for criticism and this is what is called oppression.

However, in reality, today's education, including civic education, is felt to have not been able to maximize the four pillars of UNESCO learning and has not been able to optimize character formation in citizens. Civics learning is mainly felt to have not been able to connect material with the reality of life, is not contextual, more towards memorizing and ignoring aspects of creative, critical and analytical thinking ([Nusarastriya, 2013](#); [Novitalina, 2019](#)), this does not only happen at the school level but also at the higher education level. As a result, the form of learning carried out has not been able to explore students' thinking abilities instead of realizing character.

Learning as described above can be said to only implement one pillar, namely learning to know, where learning only focuses on basic skills, understanding and analytical skills which are the basis of the first pillar. The basis of the next three pillars tends not to be maximized in current PKn learning. Students/students have not had the opportunity to try to practice their

knowledge, do not have cultural sensitivity so they still have stereotypes about other cultures, have not honed collaboration skills and have not been able to realize the character in the students. In fact, PKn aims to form citizens who have high knowledge, have attitudes and skills as citizens and are aware of their rights and obligations in living in society. (Soemantri, 2001, Nurdiansyah, 2021).

To realize the objectives of civics learning, it is necessary to maximize the pillars of learning to do, learning to live together and learning to be, this is what is trying to be presented by adapting the Living Lab concept in learning. Thus, it is expected to produce students who are able to communicate well, reason rationally, think critically, analytically, creatively, be able to act collaboratively, have real involvement in civic life, so that it leads to the birth of character in themselves. One form of character that must be possessed by citizens is the character of national spirit. This character must be possessed by a citizen so that there is a willingness and ability to sacrifice for the nation and state. National spirit is an important foundation for the sustainability and progress of a country because with this character in citizens, there will be deep loyalty to the nation and state. The Indonesian Ministry of National Education (2010) defines the character of national spirit as a way of thinking, acting, and having insight that places the interests of the nation and state above the interests of themselves and their groups. Then (Mustari, 2011) stated that nationalism/national spirit is a way of thinking, behaving and acting by prioritizing loyalty, concern and pride in the elements of one's nation. According to (Priyambodo, 2017) the character of national spirit is currently important to continue to be developed considering that radicalism,

especially in the context of religion, still emerges and becomes a threat to the unity of the Indonesian nation.

In the 1945 Constitution of the Republic of Indonesia, Article 27 paragraph 3, it is written that every citizen has the right and obligation to participate in national defense efforts, so that it explicitly means that each individual citizen must have an attitude of defending the country. This is what then also underlies the importance of building a character of national spirit because (Ali, 2018) states that the character of national spirit will be manifested in the attitude of defending the country. To realize the character of national spirit is not easy, it must go through continuous and consistent habituation so that the sense of love, loyalty and pride in the homeland will continue to exist in citizens.

Furthermore, what is no less important for citizens is to always demonstrate attitudes and behaviors that show awareness of their obligations as citizens. Citizens who comply with their obligations show how much the character of responsibility already exists in them. With the awareness of citizens towards the various obligations that are their responsibilities, a harmonious, just and sustainable society will emerge so that it can contribute to the progress and welfare of the nation and state. The Indonesian Ministry of National Education (2010) defines the character of responsibility as a person's attitude and behavior to carry out their duties and obligations, which they should do towards themselves, society, the environment (nature, social and culture), the state and God Almighty. Then, Rochmah (2016) said that responsibility is something that is natural so that it naturally becomes a part of human beings themselves. Therefore, according to Sari et al. (2021), responsibility is an essential character in human life.

However, currently the condition of the character of responsibility in citizens is starting to experience degradation. One of the causal factors is the development of technology and information which causes good habits to be marginalized from the public and replaced by bad examples that are continuously displayed. Rohani (2015) gave an example that the weakness of responsibility in citizens is shown by their behavior that likes to deviate and violate applicable rules. In fact, now, there are often events that show violent behavior, brawls and deviations, because of that the character of responsibility must continue to be developed in citizens. One way to instill and hone the character of responsibility in citizens is through education. Through this concept, a person can be accustomed to doing things that have implications for responsibility starting from the scope of school to a larger scope.

Through the Living Lab learning model, which emphasizes learning practices through cross-stakeholder collaboration, students develop the ability to understand problems in a contextual manner while also acquiring the skills to solve them (Anggarini et al., 2024). This approach is expected to foster citizens who can make positive contributions to the development of society, the nation, and the state.

This study has highlighted the importance of implementing the living lab concept in the civic education learning model in higher education. For educators and curriculum developers, the results of this study provide suggestions on the need to provide students with direct experience in responding to various problems in society accompanied by collaborative actions with related stakeholders. This can be achieved by adapting the living lab concept in learning. By implementing the living lab approach in

the learning model, it will be able to hone students' communication skills and collaboration skills, which is what is needed to face the 21st century era like today (Adiyono et al., 2025). By involving students in solving problems contextually, it will also make them more sensitive. This will lead to the birth of good characters within them.

This study has several limitations that should be considered for future research development. One of the main limitations is that it was conducted at a single educational institution, Sriwijaya University, making it difficult to generalize the findings to other institutions with different social and academic contexts (Thambu et al., 2021). Additionally, the relatively short duration of the study presents a challenge, as the quasi-experimental approach used only evaluates short-term changes in students' character through pre-tests and post-tests, without assessing the long-term impact after they graduate or enter the workforce. Another limitation is that this study does not take into account external variables that may also contribute to students' character development, such as family environment, organizational experiences, and social influences outside the classroom (Yumna et al., 2024).

For future research, it is recommended to conduct a longitudinal study to track students' character development over a longer period, both after graduation and as they transition into professional or societal roles. Further studies should also be carried out in various educational institutions with different social and learning environments to examine the broader applicability of the Living Lab model.

4. Conclusion

This study concludes that the implementation of the living lab-based learning model showed quite good

effectiveness in improving the character of national spirit and responsibility of students. The results of the N-Gain analysis showed that the effectiveness of this model was in the fairly effective category, with a significant correlation between the implementation of living labs and the development of student character. This learning model allows students to collaborate more actively, face real problems, and apply solutions based on contextual experiences.

The implementation of the living lab learning model is considered not only relevant to Civic Education but also applicable across various other disciplines, particularly in social sciences, as this model is contextual, collaborative, and participatory. Consistent implementation of living labs can provide opportunities to hone critical thinking skills, collaboration, and better social responsibility.

In the long term, this learning model has the potential to build students' character to be more responsible, socially aware, and deeply committed to national values. Its consistent implementation in various educational contexts can strengthen their commitment to civic values and encourage them to become active agents of change in society. Therefore, a broader adaptation of this learning model is recommended, including integration with real-world challenges to support the formation of student character that is relevant to the needs of the 21st century.

Future research should focus on longitudinal studies to evaluate the impact of the sustainability of the living lab learning model on the formation of students' character. This includes the spirit of nationalism and responsibility after they enter the workforce or society. Such research is important to ensure the long-term effectiveness of this approach in producing graduates who have good character and are relevant to real-life challenges.

5. References

- Adiyono, A., Nurhayati, S., Islam, M. S., Al-Badawi, H., Sain, Z. H., Wafi, H. A., & Vargheese, K. J. (2025). A transdisciplinary approach to character development: Islamic teachings and Pancasila values in shaping global and faithful students. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 198-217.
- Adomssent, M., Godemann, J., & Michelsen, G. (2007). Transferability of approaches to sustainable development at universities as a challenge. *International Journal of Sustainability in Higher Education*, 8(4), 385-402. <https://doi.org/10.1108/14676370710823564>
- Anggarini, A. G., Astuti, E., Yusdita, E. E., Ulfatun, T., Pascua, R. J., & Nafizah, U. Y. (2024). Advancing accounting education: A comprehensive approach to inventory materials learning through online applications and the Smith-Ragan model. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 62-85.
- Anti-Corruption Learning Center (ACLC). (2022). Inilah 7 perilaku koruptif mahasiswa, ayo hindari. <https://aclc.kpk.go.id/aksi-informasi/Eksplorasi/20221005-inilah-7-perilaku-koruptif-mahasiswa-ayo-hindari>
- Arikunto, S. (2006). *Prosedur penelitian: Suatu pendekatan praktik*. Jakarta: PT Rineka Cipta.
- Björstig, T., & Sandström, C. (2017). Public-private partnerships in a Swedish rural context: A policy tool for the authorities to achieve sustainable rural development? *Journal of Rural Studies*, 49, 58-68. <https://doi.org/10.1016/j.jrurstud.2016.11.009>
- Budweg, S., Schaffers, H., Ruland, R., Kristensen, K., & Prinz, W. (2011). Enhancing collaboration in communities of professionals using a Living Lab approach. *Production Planning &*

- Control, 22(5–6), 594–609.
<https://doi.org/10.1080/09537287.2010.536630>
- Chapagain, M. R., & Mikkelsen, B. E. (2023). Is a Living Lab also a Learning Lab? Exploring co-creational power of young people in a local community food context. *Youth*, 3(2), 753–776.
<https://doi.org/10.3390/youth3020049>
- Compagnucci, L., & Spigarelli, F. (2020). The third mission of the university: A systematic literature review on potentials and constraints. *Technological Forecasting and Social Change*, 161, 120284.
<https://doi.org/10.1016/j.techfore.2020.120284>
- Dianti, P. (2014). Penguatan pendidikan karakter pada pembelajaran pendidikan kewarganegaraan dalam mengembangkan sikap tanggung jawab siswa (Tesis). Universitas Pendidikan Indonesia, Bandung.
- Djahiri, A. K. (1995). Dasar-dasar umum metodologi dan pengajaran nilai-moral VCT. Bandung: IKIP Bandung.
- Freire, P. (1970). *Pedagogy of the oppressed*. The Continuum International Publishing Group Ltd.
- Graesser, A., Kuo, B. C., & Liao, C. H. (2017). Complex problem solving in assessments of collaborative problem solving. *Journal of Intelligence*, 5(2).
<https://doi.org/10.3390/jintelligence502010>
- Griffin, P., McGaw, B., & Care, E. (2012). *Assessment and teaching of 21st century skills*. New York: Springer Science Business Media.
- Hagy, S., Morrison, G. M., & Elfstrand, P. (2017). Co-creation in living labs. In D. V. Keyson, O. Guerra-Santin, & D. Lockton (Eds.), *Living labs: Design and evaluation* (pp. 101–114). Springer.
<https://doi.org/10.1007/978-3-319-33527-8>
- Hake, R. R. (1999). Analyzing change/gain scores. *American Educational Research Journal*, 36(1), 1–14.
<https://doi.org/10.3102/00028312036001001>
- Higgins, A., & Klein, S. (2011). Introduction to the Living Lab approach. In Y. H. Tan, N. B. Andersen, & S. Klein (Eds.), *Living labs for sustainable development* (pp. 10–20). Springer.
<https://doi.org/10.1007/978-3-642-15669-4>
- Istianah, A., Irawan, H., & Mas'ud, F. (2024). Peran guru pendidikan kewarganegaraan dalam membangun sekolah damai berkebhinnekaan. *Bhineka Tunggal Ika: Kajian Teori dan Praktik Pendidikan PKN*, 11(2), 147–156.
<https://doi.org/10.36706/jbti.v11i02.4>
- Johnston, E. W., Hicks, D., Nan, N., & Auer, J. C. (2011). Managing the inclusion process in collaborative governance. *Journal of Public Administration Research and Theory*, 21(4), 699–721.
<https://doi.org/10.1093/jopart/muq045>
- Kementerian Pendidikan Nasional. (2010). *Desain induk pendidikan karakter*. Jakarta: Kementerian Pendidikan Nasional.
- Komalasari, K., & Saripudin, D. (2022). *Pendidikan karakter: Konsep dan aplikasi living values education* (Edisi Revisi). Bandung: PT Refika Aditama.
- Laksana, D. S. (2016). Integrasi empat pilar pendidikan (UNESCO) dan tiga pilar pendidikan Islam. *Al-Idarah: Jurnal Kependidikan Islam*, 6(1).
<https://doi.org/10.24042/alidarah.v6i1.789>
- Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among American youth*. Thousand Oaks, CA: Sage.
- Lickona, T. (2012). *Character matters* (Persoalan karakter): Bagaimana membantu anak mengembangkan penilaian yang baik, integritas, dan kebijakan penting lainnya. Jakarta: Bumi Aksara.
- Megawangi, R. (2004). *Pendidikan karakter: Solusi yang tepat untuk membangun bangsa*. Indonesia Heritage Foundation.
- Mouffe, C. (1999). *Deliberative democracy or agonistic pluralism?* *Social Research*,

- 66(3), 745–758.
<http://www.jstor.org/stable/40971349>
- Mulyono. (2022). Studi kewarganegaraan: Konsep, teori dan kerangka psiko pedagogik. In D. Budimansyah (Ed.), *Studi kewarganegaraan*. Bandung: Jendela.
- Mustakim, B. (2011). Pendidikan karakter: Membangun delapan karakter emas Indonesia menuju Indonesia bermartabat. Yogyakarta: Samudra Biru.
- Nelrizawati, Herpratiwi, & Adha, M. M. (2022). Efektivitas pembelajaran PPKn dengan menggunakan LMS Google Classroom di masa pandemi Covid-19 terhadap hasil belajar siswa. *Citizenship: Jurnal Pancasila dan Kewarganegaraan*, 10(1), 1–13.
<https://doi.org/10.25273/citizenship.v10i1.14600>
- Nurdiansyah, E., Faisal, E. E., & Sulkipani. (2021). Pengembangan ensiklopedia identitas nasional berbasis kearifan lokal. *Jurnal Civic Hukum*, 6(2).
<https://doi.org/10.22219/jch.v6i2.14612>
- Nurihsan, A. J. (2016). Membangun peradaban melalui pendidikan dan bimbingan. Bandung: Refika Aditama.
- Pratomo, W. (2016). Memahami pendekatan dan habituasi PKn sebagai pendidikan nilai dan moral bagi guru di sekolah dasar. *Trihayu: Jurnal Pendidikan KESD-an*, 2(2).
<https://doi.org/10.30738/trihayu.v2i2.757>
- Prayitno, & Manullang, B. (2011). Pendidikan karakter dalam pembangunan bangsa. Jakarta: Gramedia.
- Priyambodo, A. B. (2017). Implementasi pendidikan karakter semangat kebangsaan dan cinta tanah air pada sekolah berlatar belakang Islam di Kota Pasuruan. *Jurnal Sains Psikologi*, 6(1), 9–15.
<https://doi.org/10.17977/um023v6i12017p9-15>
- Priyatno, D. (2016). Belajar alat analisis data dan cara pengolahannya dengan SPSS. Yogyakarta: Gava Media.
- Rachmawati, N. H., Muhroji, M., Misyanto, M., & Yusrin, Y. (2024). Cultivating critical thinkers: Independent curriculum strategies to enhance critical thinking skills in elementary students. *Jurnal Ilmiah Kampus Mengajar*, 99-114.
- Rakhmah, R., Niron, M. D., & Jha, G. K. (2024). Beyond the Classroom: A Comprehensive Analysis of Teacher Personality Competence, Parenting Styles, and Their Joint Influence on the Character Formation in Junior High School Education. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 156-169.
- Rakhmat, D. (2001). Metode penelitian komunikasi. Bandung: PT Remaja Rosdakarya.
- Rivera, C. J., & Savage, C. (2020). Campuses as living lab for sustainability problem-solving: Trends, triumphs, and traps. *Journal of Environmental Studies and Sciences*, 10, 334–340.
<https://doi.org/10.1007/s13412-020-00620-x>
- Rochmah, E. Y. (2016). Mengembangkan karakter tanggung jawab pada pembelajar. *Al Murabbi*, 3(1), 36–54.
- Rohani. (2015). Urgensi pembinaan tanggung jawab warga negara melalui community civics. *Sosial Horizon: Jurnal Pendidikan Sosial*, 2(2), 221–234.
<https://doi.org/10.31571/sosial.v2i2.107>
- Sari, S. P., & Bermuli, J. E. (2021). Pembentukan karakter tanggung jawab siswa pada pembelajaran daring melalui implementasi pendidikan karakter. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 7(1), 110–121.
<https://doi.org/10.33394/jk.v7i1.3150>
- Schachter, M. E. E., Matti, C. E., & Alcantara, E. (2012). Fostering quality of life through social innovation: A living lab methodology study case. *Review of Policy Research*, 29(6), 672–692.
<https://doi.org/10.1111/j.1541-1338.2012.00588.x>

- Soemantri, M. N. (2001). Menggagas pembaharuan pendidikan PKn. Bandung: Remaja Rosdakarya.
- Stone, M. T. (2015). Community-based ecotourism: A collaborative partnerships perspective. *Journal of Ecotourism*, 14(2-3), 166-184. <https://doi.org/10.1080/14724049.2015.1023309>
- Sugiyono. (2021). Metode penelitian kuantitatif, kualitatif, dan R&D. Bandung: Alfabeta.
- Suhartono. (2009). Filsafat pendidikan. Yogyakarta: Ar-Ruzz Media.
- Surya, M. (2016). Guru profesional: Strategi membangun generasi emas. Tema guru dalam mempersiapkan generasi emas Indonesia. Bandung: Telkom University.
- Susetyo, B. (2010). Statistika untuk analisis data penelitian. Bandung: Refika Aditama.
- Tanszil, S. W. (2023). Pengembangan model pembelajaran project nilai antiradikalisme untuk mengokohkan komitmen warga negara muda (Disertasi). Universitas Pendidikan Indonesia, Bandung.
- Thambu, N., Prayitno, H. J., & Zakaria, G. A. N. (2021). Incorporating active learning into moral education to develop multiple intelligences: A qualitative approach. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 17-29.
- Tridiana, R., & Rizal, F. (2020). Keterampilan guru abad 21 di sekolah menengah kejuruan (SMK). *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 4(2). <https://doi.org/10.23887/jipp.v4i2.25268>
- Van Geenhuizen, M. (2018). A framework for the evaluation of Living Lab as boundary spanners in innovation. *Environment and Planning C: Politics and Space*, 36(7), 1280-1298. <https://doi.org/10.1177/2399654417753623>
- Wibowo, M. E. (2012). Menyiapkan bangkitnya generasi emas Indonesia. Semarang: Universitas Negeri Semarang.
- Widiana, E. (2024, Maret 28). Heboh mahasiswa Unair plagiat tugas kuliah. Detik.com. <https://www.detik.com/jatim/berita/d-7267266/heboh-mahasiswa-unair-plagiat-tugas-kuliah>
- Wiek, A., Xiong, A., Brundiers, K., & van der Leeuw, S. (2014). Integrating problem- and project-based learning into sustainability programs: A case study on the School of Sustainability at Arizona State University. *International Journal of Sustainability in Higher Education*, 15(4), 431-449. <https://doi.org/10.1108/IJSHE-02-2013-0013>
- Yaputra, H. (2024, Mei 4). Viral dugaan penyalahgunaan KIP kuliah mahasiswa Undip, Kemendikbud: Tanggung jawab kampus. Tempo.co. <https://www.tempo.co/politik/viral-dugaan-penyalahgunaan-kip-kuliah-mahasiswa-undip-kemendikbud-tanggung-jawab-kampus-62140>
- Youniss, J., Bales, S., Christmas-Best, V., Diversi, M., McLaughlin, M., & Silbereisen, R. (2003). Youth civic engagement in the twenty-first century. *Journal of Research on Adolescence*, 12(1), 121-148. <https://doi.org/10.1111/1532-7795.00027>
- Yumna, Y., Jaili, H., Tupas, P. B., Azima, N. F., Minsih, M., Dahliana, D., & Fransiska, N. (2024). Transformative learning media for Generation Z: Integrating moral values through interactive e-books in Islamic education. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 403-422.
- Zhan, Z., He, G., Li, T., He, L., & Xiang, S. (2022). Effect of group size on students' learning achievement, motivation, cognitive load, collaborative problem-solving quality, and in-class interaction in an introductory AI course. *Journal of Computer Assisted Learning*, 38(6), 1807-1818. <https://doi.org/10.1111/jcal.12722>

Zubaedi. (2012). Desain pendidikan karakter. Jakarta: Kencana.

Zuriah, N. (2021). Penanaman nilai-nilai karakter Pancasila dalam pembelajaran pendidikan kewarganegaraan berbasis polysynchronous di era new normal.

Jurnal Moral Kemasyarakatan, 6(1), 12–25.

<https://doi.org/10.21067/jmk.v6i1.5086>