



# Development of Snakes and Ladders Media Based on QR Code Material on the Value of the Pancasila Precepts with the Character of love for the Country in Grade V Elementary School

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## ABSTRACT

The purpose of research and development is to develop learning media for snakes and ladders based on QR Code material on the values of the Pancasila precepts with valid, practical and effective contents of love for the homeland for class V SD. This development uses the Research and Development (R&D) method by following the Analyze, Design, Development, Implementation, and Evaluation (ADDIE) steps. This research uses a type of pre-experimental research using one group pretest-posttest design. Collecting data using interviews, questionnaires and tests of student learning outcomes. This study involved 2 experts, one teacher, and 21 students. Material expert validation gets 88.2% results, media experts get 98.6% results, users get 100%. The practicality of the product by students and teachers obtained a result of 100% and the effectiveness of the product showed that there were differences before being given treatment and after being given treatment in the form of snakes and ladders media. This can be seen by using Paired Sample T Test with significance value of 0.000 less than 0.05. The conclusion of this study is snakes and ladders learning media based on QR Code, material for the values of Pancasila precepts with love for the motherland character content for class V SD, according to the validator, very valid, practical for students and teachers, and effective in learning.

## ARTICLE INFO

### Article History:

*Submitted/Received 02 Feb 2024*

*First Revised 02 Apr 2024*

*Accepted 01 Jul 2024*

*First Available online 01 Jul 2024*

*Publication Date 01 Jul 2024*

### Keyword:

*Snakes and ladders,*

*The character of Love,*

*The values of the Pancasila.*

## 1. INTRODUCTION

Learning is said to be ideal if it can encourage student creativity as a whole, make students more active, achieve effective learning goals, and realize pleasant conditions for students (Fadilaturrehmi, 2018). Student learning can be ideal if it is fully supported by ideal teachers. Sani (2014) states that ideal learning is closely related to several factors including, the role of the teacher, the effectiveness of learning conditions, student involvement, and supporting learning resources or environments. Strengthened by Suyono and Hariyanto (2012) argue that there are seven criteria that are required to exist in the teacher for ideal learning, namely knowledge, nature, how to teach, what is delivered, teacher reactions to students, expectations, management. So ideal learning can be influenced by internal and external factors. In ideal learning, the teacher plays an important role during the learning process.

In the ideal learning process, there are several components related to learning according to Pane & Dasopang (2017) including teachers and students, goals, materials, methods, media, and evaluation. Learning components are all aspects that need each other and are closely related to one another so that they cannot be separated. Learning cannot be done optimally without these learning components.

In the era of rapid technology, it is now easier for students to access information, technology and learning media to support learning outcomes in order to master a material (Soleh et al., 2019). This is also in line with Muzaki (2017) Teachers in elementary schools must have the ability to master technology as well as technology-based media for a learning process. Therefore, it is important for the teacher as an educator as well as a facilitator to choose the right use of media for their students.

Learning media acts as an intermediary when learning takes place. In addition, it also makes teachers more creative and innovative when delivering material to students and makes students not bored when learning activities with teachers in the classroom (Ayu et al., 2019). The teacher as an educator as well as a facilitator cannot be separated from learning media. One of the real learning media that can be touched and technology-based is snakes and ladders using QR Code (Quick Response Code). In line with Rifki Afandi (2015), snakes and ladders media if used during learning will help increase student learning outcomes.

The development of this teaching material is also adjusted by the rapid development of technology, namely by utilizing the QR Code. Because QR Code has been widely used for purposes in various fields, QR Code is a form of technological development in which it contains information in a practical and attractive form. The media also contains the content of the character of love for the country because character education is very important to instill in students.

Based on the results of the needs analysis with the fifth grade teacher Mrs. MS, it can be seen that: (1) SDN Sananwetan 01 uses the 2013 curriculum learning and the independent curriculum in grade 4, (2) Learning at SDN Sananwetan 01 is offline, (3) At the beginning of learning teachers more often use videos as the main choice when entering a new theme, (4) There is no real media that is interesting about the material, (5) The material on the values contained in the Pancasila precepts requires media because Pancasila is the ideology of the nation which contains important values to be implemented by students and has extensive material (6) The school has learning support facilities in the form of 6 LCD projectors, 15 chromebooks, wifi and speakers. (7) Fifth grade students of SDN Sananwetan 01 are able to operate cellphones independently.

Planting the character value of patriotism can be done with students' activities at school. According to Suyadi (2013), the character of loving the country is shown when individuals have a national spirit, obey the norms and regulations that apply, are responsible and care

for others, have a sense of tolerance between religions, ethnicities, and other cultures, use Indonesian language properly, and avoid unnecessary things that can harm the nation itself. An educator does not act as a transfer of knowledge only, but also transfer of values and transfer of skills.

According to Retnosari et al. (2020) Civics content aims to provide education and provisions to students so that a sense of love for the country is embedded, and can develop and appreciate the noble values of the Indonesian nation. The material will be incorporated into an interesting QR Code-based snakes and ladders learning media so that learning becomes more active and fun. This is also in line with the opinion of Nugrahani (2007) that snakes and ladders as learning media are fun and effective in increasing the understanding and absorption of students in learning activities. The novelty of this development research from previous researchers is in terms of delivering the material and questions contained in the QR Code-based snakes and ladders media using quizzes to measure student abilities. In addition, the material is also in the form of video and PowerPoint which is packaged in the form of a QR Code.

This research aims to develop snakes and ladders learning media based on QR Code material on the value of the Pancasila precepts with the character of love for the homeland of grade V SD which is valid, practical for students and teachers and effective in learning outcome.

## 2. METHODS

The research method is Research and Development (R&D). The development stages are adjusted to the ADDIE model, namely analyze, design, development, implementation, and evaluation. The first stage is analyzing the needs of the QR Code-based snakes and ladders product to be developed. This stage aims to make the product developed according to the needs of the target. The analysis activities carried out at SDN Sananwetan 01 Blitar City include needs analysis activities, analysis of student characters, and curriculum analysis.

The next stage is design for this stage, product design, preparation of validation instruments and student response questionnaires regarding the practicality of the products developed and test sheets including pre-tests and post-tests. by designing e-module products, and making validation instruments. Product design. For product design, it will start from setting learning objectives, compiling material and questions in QR Code-based snakes and ladders media, planning the game system and designing learning media which will use Canva software, Ms. Word, PowerPoint and online through the website <https://www.qrstuff.com> and <https://quizizz.com-modul>. Furthermore, the development stage realizes the product according to the design and product specifications that have been determined. The QR Code-based snakes and ladders learning media is printed on a 1 m x 1 m banner consisting of 40 boxes developed using the canva application.

The implementation stage participants are grade V students totaling 21 students. At this stage there are 2 stages of testing, namely small scale and large scale. This research involved one teacher. This stage is to determine the practicality and effectiveness of the product. The evaluation stage is carried out after the analysis, design, development, and implementation stages or at the end of each stage in research and development. After that, an evaluation is carried out which is obtained from the supervisor's input, the results of the validation of material experts, media experts, design experts, users, and student response questionnaires to draw conclusions.

Data collection instruments through interviews, questionnaires, and student learning outcomes tests. The types of data in the development of QR Code-based snakes and ladders are quantitative and qualitative. Quantitative data comes from validity trials of material experts, media experts and users as well as product practicality tests through questionnaires aimed at students as well as teachers. For the effectiveness test, it is assessed from the pre-test and post-test questions, each of which is 15 test questions about the symbol of Pancasila and the practice of the values of the Pancasila precepts in daily life. Then the data will be processed through SPSS with the Paired Sample T Test. But before the t test is tested for normality. While qualitative data is obtained from the results of practicality questionnaire suggestions and input from material experts, media experts, and users as well as needs analysis data with students, as well as the results of interviews with teachers.

### 3. RESULTS AND DISCUSSION

This chapter discusses the process and results of development research. The analysis stage, first is a needs analysis by conducting interviews with the fifth grade teacher of SDN 1 Sananwetan. From these activities it can be seen that, At SDN Sananwetan 01 using the 2013 curriculum learning and the independent curriculum in grade 4, learning at SDN Sananwetan 01 is offline, at the beginning of learning teachers more often use videos as the main choice when entering a new theme, There is no real media that is interesting about the material, A means of communication is needed to convey the content of the Pancasila precepts, considering that Pancasila is the ideological foundation of the state which contains important principles to be implemented by students and has extensive material, the school has learning support facilities in the form of 6 LCD projectors, 15 chromebooks, wifi and speakers. Grade V students of SDN Sananwetan 01 have been able to operate cellphones independently.

Analysis of student characteristics, namely students like learning with learning media, students are interested in learning the material of the value of Pancasila precepts using snakes and ladders media based on QR Code, students have never previously learned material through snakes and ladders media based on QR Code.

Analysis of the fifth grade learning curriculum at SDN Sananwetan 01 using the 2013 curriculum. Furthermore, it analyzes the basic competencies and indicators of grade V Civics content on the material of practicing the value of the Pancasila precepts.

The design stage, at this stage, first formulates learning objectives, then plans the content of compiling product outlines in the form of material and some questions contained in the QR Code-based snakes and ladders media which are adjusted to KI, KD, and indicators. The questions will be converted into a quiz online through the website <https://quizizz.com>. Then the material is packaged in the form of PowerPoint and video. Then the stage of planning the game system the game system on the snakes and ladders media based on the QR Code concept is almost similar to the snakes and ladders game that is generally applied. But in the QR Code-based snakes and ladders there are modified and of course follow the current technological developments to make it more attractive to students. The game system itself is summarized in a game manual. Furthermore, designing the components of the QR Code-based snakes and ladders, designing the components in the QR Code-based snakes and ladders media, including the snakes and ladders arena, question cards and materials, and the guidebook.

Finally, designing the stage of designing assessment instruments for validators. This stage makes validation instruments for material experts, media experts, users and practicality questionnaires as well as pre-test and post-test questions. Then a series of stages were carried out and then consulted with the supervisor.

In this development process, there are several steps that must be carried out, which involve a series of development activities which include preparing pawns, dice, then printing. After everything is approved by the supervisor, the QR Code-based snakes and ladders media is then printed (see **Figure 1**).



**Figure 1.** Snakes and Ladders Media Design

After the developed media has been completed, it is necessary to validate the media. The validation process by giving the media products developed to validators and users.

Acting as a material expert is Mr. Ferril Irham Muzaki, S.Pd, M.Pd as a PGSD UM lecturer and then acting as a media expert is Mr. Dr. M. Anas Tohir, M.Pd as a PGSD UM lecturer and Mrs. MS as the fifth grade teacher of SDN Sananwetan 01. The following are the results of the validation recapitulation (see **Tabel 1**).

**Tabel 1.** Recapitulation of Validation Results

No	Validatio	Value	Category
1.	Material Expert	88,2 %	very valid
2.	Media Expert	98,6 %	very valid
3.	Users	100%	very valid
	Average	95,6 %	very valid

Then the product was revised according to suggestions and input by expert validators and users. Implementation, in this phase, testing is carried out through small-scale and large-scale trials. Large-scale trial data is used to determine the practicality and effectiveness of QR Code-based snakes and ladders media.

Small-scale trials, conducted with 4 fifth grade students of SDN Sananwetan 01. In this trial, it will be seen how practical the QR Code-based snakes and ladders media is. After conducting small-scale trials, students filled out student response questionnaires, while the results were 100% with very practical results with information that could be used without the need for revision.

Large-scale trials were conducted with a total of 21 fifth grade students of SDN Sananwetan 01. This trial will see how effective and practical QR Code-based snakes and ladders media are in large-scale trials.

The results of the effectiveness trial with pre-experimental design one-group pretest-posttest design. This design is used in accordance with the objectives to be achieved, namely

to produce snakes and ladders media based on QR Code material on the value of the Pancasila precepts with the character of love for the country that is effective on learning outcomes, this is done to see the effectiveness of snakes and ladders media based on QR Code with student learning outcomes. Before carrying out a large-scale trial, a pre-test was carried out to determine the level of understanding using the previous media, namely based on the theme book. Learning outcome data can be seen as follows (see **Tabel 2**).

**Tabel 2.** Student Learning Outcome Data

Data	Pretest	Posttest
Number of Samples	21	21
Minimun Value	40	60
Maximum Value	80	100
Mean	58.7143	87.0000
Variance	112.114	124.948
Standard Deviation	10.58840	11.17800

After conducting a trial using QR Code-based learning media, students were given a post-test to test whether there was an increase in students' understanding after using the developed media from the information listed in Table 2, there were 21 students as research samples. The data shows that the lowest score on the pretest is 40, while the highest score is 80. The average (mean) on the pretest is 58.7143 with a pretest variance 112.114. Meanwhile, in the final exam (posttest), the lowest score was 60 and the highest score reached 100. The mean of the posttest was 87 with a variance of 124,948.

Normality Test, According to Cholida et al., (2021) to determine whether the data is normally distributed or not through a comparison of the significance level of 0.05. If  $> 0.05$  it is said to be normal. In normality testing through the SPSS for windows version 25 application. In the normality test, Shapiro Wilk was used. The following is the calculation table (see **Tabel 3**).

**Tabel 3.** Normality Test of Learning Outcomes

	Statistic	Df	Sig.
<b>Pretest</b>	.951	21	.349
<b>Posttest</b>	.918	21	.078

From the table above the pretest normality test results are  $0.349 > 0.05$  and posttest  $0.078 > 0.05$ . Then the data is normally distributed.

Hypothesis testing with the Paired Samples T Test test through the SPSS for windows version 25 application. If the significance value is  $< 0.05$ ,  $H_a$  is accepted and  $H_o$  is rejected. With the information  $H_o$ : there is no significant difference between the average pretest score and the average post-test score  $H_a$ : there is a significant difference between the average pre-test score and the average post-test score.

From the paired sample t test, the Sig. (2-tailed)  $0.000 < 0.05$ , it is concluded that there is a significant difference in pre-test and post-test learning outcomes. Thus, based on decision making whose significance value is  $< 0.05$ ,  $H_a$  is accepted and  $H_o$  is rejected. So the QR Code-based snakes and ladders media is effective for learning because it can increase students' understanding based on the processing of pretest and posttest data results in large-scale trials. The following are the results of the hypothesis test calculation (see **Tabel 4**).

**Tabel 4.** Paired Sample T Test of Learning Outcomes

	Mean	95% Confidence Interval of the Difference				T	df	Sig.(2-tailed)
		Std. Dev	Std. Er. Mean	Low	Up			
<i>Pret est- Postt est</i>	- 27.904 76	4.53 767	.9902 0	- 29.97 029	- 25.83 924	- 28.18 1	20	.000

After the effectiveness trial, students and teachers as users were given a response questionnaire, while the results of the validation of the student and teacher response questionnaires were 100% with very practical results with a statement that it could be used without the need for revision.

The evaluation stage is carried out based on suggestions obtained from supervisors, expert validators, and student and teacher response questionnaires during the process of implementing the QR Code-based snakes and ladders learning media trial on the value of the Pancasila precepts.

## 4. DISCUSSION

### 4.1 Product Validity

The purpose of this research is to develop QR Code-based media that is valid, practical and effective on the material of practicing the value of the Pancasila precepts of grade V SD. The goal that the researcher wants to achieve from the findings of Musa'adah (2017), the teaching and learning process with snakes and ladders media can improve student learning outcomes which are proven by the results of his research meeting valid criteria from the assessment of experts as well as the significance value of the difference in average scores (t test) pretest and posttest. Practical use of learning, as evidenced by the large percentage of student and teacher responses after using the product.

QR Code-based snakes and ladders media products have been validated by experts and users so that they are very valid and can be used. Material expert validation includes 3 aspects of assessment, namely material content, presentation of material content, and language rules. Media expert validation includes 3 aspects of assessment, namely media presentation, presentation of material content, and rules. While user validation includes 4 aspects of assessment, namely material content, media presentation, presentation of material content, and language rules. Learning by playing can provide opportunities for students to explore, discover for themselves, practice, and gain a very broad range of concepts and understanding through an inspiring and fun learning atmosphere (Ferryka, 2017). So the QR Code-based snakes and ladders media is suitable for use in learning activities. times, namely small-scale and large-scale trials. Small-scale trials with 4 fifth grade students and a large scale with 21 fifth grade students of SDN Sananwetan 01 Blitar City for small-scale trials, students were given a questionnaire to measure the practicality of the product and to obtain suggestions if the snakes and ladders product still had shortcomings in its use. The results obtained for this trial obtained very practical results and can be used without the need for revision.

The large-scale trial was given a student response questionnaire and a user response questionnaire, namely the teacher, to measure how practical the QR Code-based snakes and ladders media was and to obtain suggestions if there were deficiencies in the products

developed. The results of this large-scale trial are very practical and can be used without the need for revision from users (teachers) and students.

#### 4.2 Effectiveness

Media can be said to be effective if the media can provide behavioral changes in students towards positive and better things where each student has potential and differences so that learning objectives can be achieved (Cholida et al., 2021). This opinion is also in line with Nurrita (2018) that learning media is said to be effective if it can be used as a guide for educators to help present material interestingly according to learning objectives so as to improve the quality of the learning process.

Effective media to be developed is real media that contains technological capabilities in the form of QR Code-based snakes and ladders in accordance with previous opinions, namely Nugrahani's (2007) which snakes and ladders as a fun and effective learning media to increase understanding as well as the absorption of students in learning activities.

The QR Code-based ladder snake media was conducted at SDN Sananwetan 01 with a sample size of 21 students. From the data in table 2, the minimum student pretest score is 40 and the maximum score is 80. For a mean of 58.7143 and a variance of 112.114. Meanwhile, the minimum value of the student posttest is 60 and the maximum value is 100, as well as the mean 87.0000 and variance 124.948.

The results of the normality test for the learning outcomes of class V students through the Shapiro Wilk test for the pretest have a significance value of  $0.349 > 0.05$ . Then the posttest has a significance value of  $0.078 > 0.05$ . It is concluded that the pretest and posttest data are normally distributed.

Processing of paired sample t test data through the SPSS application compares the average results of the pretest and posttest. Based on the average results of the pretest and posttest, the Sig. (2- tailed) is  $0.000 < 0.05$ . It is concluded that there is a significant difference in learning outcomes. Based on decision making whose significance value is  $< 0.05$ ,  $H_a$  is accepted and  $H_o$  is rejected. In line with Sunaengsih (2016), the use of appropriate learning media plays a role in helping learning to run effectively as expected.

Learning media can be categorized as effective through the paired sample t test which illustrates the effectiveness of the media because the media succeeds in turning abstract material into real things for students to understand more easily. Also supported by QR Code-based snakes and ladders media that can provide stimulus to students by being equipped with cards and interesting activities so as to increase student learning motivation. In accordance with the opinion of Indriasih (2015) thematic learning through the application of educational game tools snakes and ladders students can become more active which can improve learning achievement and character. Teachers can utilize learning media that are games to make it easier when delivering material to students because the learning process uses the concept of learning while playing (Vidyasari, 2021).

The learning media developed must be adapted to the characteristics of students where elementary school age students like to play. The use of games can be used as an alternative learning media that is attractive to students. With that, the snakes and ladders media based on QR Code material on the value of the Pancasila precepts with the character of love for the homeland of class V SDN Sananwetan 01 Blitar City is effective in increasing students' understanding of the material, especially the material on the practice of the value of the

Pancasila precepts. In line with what has been said before, because snakes and ladders media are also equipped with cards and interesting activities to improve student understanding results.

## 5. CONCLUSION

Research on snakes and ladders learning media based on QR Code material on the value of the Pancasila precepts with the character of love for the homeland class V obtained validation results of 88.2% from material experts and media experts of 98.6%, users of 100%. The practicality of the product gets a result of 100%. The effectiveness of the product in improving learning outcomes from the paired sample t test results Sig. (2-tailed) 0.000 <0.05, it is concluded that there is a significant difference in pre-test and post-test learning outcomes. From this description, media products are suitable for use in learning and practical for students and effective in improving learning outcomes.

The research suggestions are (1) for students, students must be able to operate smartphones and have internet quotas or WIFI networks to make it easier to access material and questions in the form of quizzes, (2) for teachers, users must prepare supporting facilities such as: smartphones, WIFI or internet networks to access material and questions from the QR Code on the snakes and ladders card so that the use of media is maximized and effective, (3) For future researchers, the development of snakes and ladders media based on QR Code material on the practice of the precepts of Pancasila with the character of patriotism in the material on the practice of the precepts of Pancasila, for future researchers can develop other materials.

## 6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

## 7. REFERENCES

- Ayu, D. W., Triwoelandari, R., & Fahri, M. (2019). Media pembelajaran powtoon terintegrasi nilai-nilai agama pada pembelajaran IPA untuk mengembangkan karakter. *Al-Adzka: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, 9(2), 65–74. <https://doi.org/10.18592/aladzkapgmi.v9i2.3088>
- Afandi, R. (2015). Pengembangan media pembelajaran permainan ular tangga untuk meningkatkan motivasi belajar siswa dan hasil belajar IPS di sekolah dasar. *JINoP (Jurnal Inovasi Pembelajaran)*, 1(1), 77–89. <https://doi.org/10.22219/jinop.v1i1.2450>
- Cholida, D. M. N., Roebyanto, G., & Ahdhianto, E. (2021). Keefektifan Media Video terhadap Minat dan Hasil Belajar Matematika Kelas III SD. *Jurnal Pembelajaran, Bimbingan, Dan Pengelolaan Pendidikan*, 1(7), 563–572. [10.17977/um065v1i72021p563-572](https://doi.org/10.17977/um065v1i72021p563-572)
- Fadilaturrahmi, F. (2018). Lingkungan Belajar Efektif Bagi Siswa Sekolah Dasar. *Jurnal Basicedu*, 1(2), 61-69. <https://doi.org/10.31004/basicedu.v2i2.169>
- Ferryka, P. Z. (2017). Permainan ular tangga dalam pembelajaran matematika di sekolah dasar. *Magistra*, 29(100), 58-64.
- Indriasih, A. (2015). Pemanfaatan alat permainan edukatif ular tangga dalam penerapan

- pembelajaran tematik di kelas III SD. *Jurnal pendidikan*, 16(2), 127-137. <https://doi.org/10.33830/jp.v16i2.343.2015>
- Kemendikbud. (2011). Pedoman pelaksanaan pendidikan karakter. *Jakarta: Kementerian Pendidikan Nasional Badan Penelitian dan Pengembangan Pusat Kurikulum dan Perbukuan*.
- Muzaki, F. I. (2017). Membelajarkan bahasa Indonesia untuk generasi digital di sekolah dasar. *Wahana Sekolah Dasar*, 25(1), 23–27. <http://dx.doi.org/10.17977/um035v25i12017p023>
- Musa'adah, N. (2017). Pengembangan media ular tangga pembelajaran IPA materi perubahan lingkungan kelas IV Sdn Demaan Rembang. *Skripsi Universitas Negeri Semarang*.
- Nugrahani, R. (2007). Media pembelajaran berbasis visual berbentuk permainan ular tangga untuk meningkatkan kualitas belajar mengajar di sekolah dasar. *Lembaran Ilmu Kependidikan*, 36(1), 37-44. <https://doi.org/10.15294/lik.v36i1.524>
- Nurrita, T. (2018). Pengembangan media pembelajaran untuk meningkatkan hasil belajar siswa. *Jurnal Misykat*, 3(1), 171-187.
- Pane, A., & Dasopang, M. D. (2017). Belajar dan pembelajaran. *Fitrah: Jurnal Kajian Ilmu-Ilmu Keislaman*, 3(2), 333-352. <http://dx.doi.org/10.24952/fitrah.v3i2.945>
- Retnosari, Y. D., Zainuddin, M., & Muzaki, F. I. (2020). Implementasi Model Talking Stick Untuk Meningkatkan Hasil Belajar Materi Keberagaman Suku Bangsa, Sosial, dan Budaya Berbasis Karakter Toleransi dan Cinta Tanah Air, 4(2), 186-192. [https://doi.org/10.28926/riset\\_konseptual.v4i2.197](https://doi.org/10.28926/riset_konseptual.v4i2.197)
- Sani, R. A. (2014). *Pembelajaran Saintifik Untuk Implementasi Kurikulum 2013*. Jakarta: Bumi Aksara.
- Suyono & Hariyanto. (2012). *Belajar dan Pembelajaran*. PT Remaja Rosdakarya.
- Soleh, M. R., Nurajizah, S., & Muryani, S. (2019). Perancangan animasi interaktif prosedur merawat peralatan multimedia pada jurusan multimedia SMK BPS&K II Bekasi. *Jurnal Teknologi Dan Informasi*, 9(2), 138–150. <https://doi.org/10.34010/jati.v9i2.1899>
- Suyadi. (2013). Strategi Pembelajaran Pendidikan Karakter. *Bandung: Remaja Rosdakarya*.
- Sunaengsih, C. (2016). Pengaruh media pembelajaran terhadap mutu pembelajaran pada sekolah dasar terakreditasi A. *Mimbar Sekolah Dasar*, 3(2), 183-190. <https://doi.org/10.53400/mimbar-sd.v3i2.4259>
- Vidyasari, V. (2022). Pengembangan media pembelajaran game edukasi sebagai pencegahan kecanduan game online penyebab faktor anak malas belajar di SDN 01 Sendangharjo, 6(4), 675-679. <http://dx.doi.org/10.29303/jipp.v6i4.302>