Character Education through RADEC Learning for V Grade Elementary School Students on Water Pollution Material

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Abstract. Character education is one of the most important parts of national education wher moral values are highly emphasized to students. This research aims to see the application of student character education through RADEC learning on water pollution material. This research use descriptive qualitative research methods. The subjects of this study consisted of 21 V grade students in on of the public elementary schools in sumedang district, cimalaka regency. Data collection was carried out after the research activity took place through the distribution of questionnaire to students. Processing the results of research data is determined based on the aspect of character education that appears through the percentage value of students answers then calculates the average results, and the research data is analysis qualitatively. The results showed that the use of the RADEC learning could show aspects of character education for V grade elementary school students about water pollution.

Keywords: Character Education, RADEC, Water Pollution.

INTRODUCTION

Developing the potential of students is one of the objectives of national education in order to become human beings who fear God Almighty, have noble character, are capable, creative, independent, and become democratic and responsible citizens (Tim Pusat Penilaian Pendidikan Kemdikbud, 2019). Based on this, character building is one of the programs prioritized by the government. Moral problems among students demand the holding of character education. Schools must be able to guide and be responsible for instilling and developing good values in students. Character education is expected to put emphasis on certain values, such as respect, responsibility, honesty, caring, and fairness and help students to understand, pay attention to, and carry out these values in everyday life. (Sudrajat, 2011).

Character education must be done correctly where it can become a sensitive habit in the environment. The implementation of character education is not easy, there are lots of influences in the surrounding environment, especially in the environment of students. Therefore, the application of character education must be carried out in stages for students such as giving good values, for example disposing of trash in its place, this gives a sense of responsibility and care for the surrounding environment. There are lots of examples that can be done by educators to students in instilling character values, not only telling them that things are bad, but must be done in real terms so that students can emulate the behavior of these values which are then implemented by them in everyday life. day. Cultivating character does not only teach about what is right and what is not. Character education is an attempt to instill good habits so that students are able to behave and act based on values in their personality (Kristiawan, 2016 (dalam Sukmawati et al., 2021)). Values in character education are developed based on sources, namely religion, Pancasila, and national education goals (Hasan, 2012). The characters that are applied in learning are knowing the good, loving the good, and doing good (Sudrajat, 2011).

The application of character in learning is like knowing what is good where students can understand and share what is good and what is bad, so that the development of abilities that occur can conclude a situation in the environment and then choose something good to do. Therefore the application of these characters can provide a policy that arises separately from the ability of students, for example students know that the habit of littering can damage the environment such as flooding. Preventing environmental damage is an attitude and action that can attempt to repair environmental damage that has occurred. Ignorance of the environment can cause problems that often occur in green environmental sustainability such as the absence of water absorption when

it rains which can cause flooding or landslides. One thing that can be done is character building from the start. This formation can be applied in the learning carried out. Therefore, with the existence of character education learning, it is hoped that students will have a concern for nature and the surrounding environment. Character education is an attempt to educate children to be able to make wise decisions and practice them in everyday life so that they can make a positive contribution to the environment Ratna Megawangi (dalam Najib, 2016:62(dalam Purwanti, 2017).

Indonesia has determined a policy for developing aspects of the character of students in the curriculum, namely through a character education program (PPK) which starts with eighteen values and then condenses into five main character values, namely, religious, nationalist, independent, integrity, and mutual cooperation (Tim Pusat Penilaian Pendidikan Kemdikbud, 2019). The first is religious value, reflecting faith in God Almighty which is applied to mutual respect for the differences in religious teachings they believe in such as tolerance and living in harmony. Both are nationalists, providing space for the highest respect for culture, politics, economy and the environment. Third, independence, there is no sense of dependence on others, so as to maximize one's potential, such as thoughts, time, and energy to achieve goals. The fourth is integrity, responsible attitude, loyal and committed to human moral values. Fifth, gotong royong, a form of respect for everyone by providing assistance according to what they need. Character education can involve all parties who have an influence on its formation in education such as the family, the school environment, and the surrounding community. The success of character formation and education will not succeed if there is no continuity in the educational environment (Chan et al, 2019(dalam Ismail, 2021).

The teacher is one of the components in the teaching and learning process which has a very important role in efforts to form potential human resources in the field of development, therefore the teacher must be able to play an active role and place his position as a professional staff, so that it is in accordance with the demands of a growing society. Improving the quality of education, the role of the teacher is very large and is the core role of directly interacting with students and carrying out the provision of knowledge. The teacher develops character education values for students, the characters that have been instilled will gradually become habits and be implemented in everyday life. Caring for the environment is an attitude and action that seeks to prevent damage to the environment and seeks to prevent damage to the surrounding environment. The character of caring for the environment can be a reflection of concern and sensitivity to the environment.

Implementation of effective learning to develop aspects of student character where students experience changes in behavior as a result of the learning they get based on experience and an environment that has an influence (Yusuf, 2017). The application of learning models can be a way for effective learning, and to bring out aspects of character. The RADEC learning model is a learning model that has been adapted to the conditions of education in Indonesia (Sopandi, 2019). This model was first introduced by Sopandi in 2017 (H. Lestari eat al., 2021(dalam Lubis et al., 2022)). As for the syntax of the RADEC learning model, namely: Read, Answer, Discussion, Explain, and Create. Based on research conducted by (Sopandi, 2019). that the RADEC learning model has a syntax that can be easy to remember and effective when applied in learning activities.

The application of a learning model that can bring out aspects of the character of students in learning science, namely the RADEC learning model. In accordance with the research that has been done by (Sukmawati et al., 2021) that online learning through the RADEC learning model can bring up character aspects in each syntax, namely, at the read, answer, discuss and explain, and create stages. Collecting research data using interviews and observation of the emergence of character aspects. The novelty carried out by researchers is about how the emergence of character education through the RADEC learning model in elementary schools in class V in Cimalaka sub-district, Sumedang Regency on the material of water pollution. Then the data collection was carried out based on a student questionnaire.

METHOD

The method used in this research is descriptive qualitative method. Descriptive research is research that describes what variables, symptoms, or situations are (Zellatifanyy & Mudjiyanto, 2018). According to (Sugiyono, 2010) descriptive research is research to determine the value of independent variables without making comparisons or connecting with other variables. Descriptive analysis in this study is in the form of a percentage of the results of each aspect contained in the collaboration skills indicator. while the qualitative approach is research that includes reports, descriptions of words, or pictures (Rusmiatiwi, 2018).

This research will be conducted in one of the elementary schools in Cimalaka District, Sumedang Regency with the research subject being fifth grade students, totaling 21 students. The sample used is purposeful sampling. The object of this research is the application of character education through RADEC learning to students in learning.

Student character education data collection techniques were collected through a questionnaire. Data collection in the questionnaire used a Likert scale with the choices SS (strongly agree), S (agree), TS (disagree), and STS (Strongly disagree). Indicators for assessing aspects of character education are based on several indicators described in table 1.

Table 1. Character Education Aspect Indicators

Aspect	Indicator
Religious	Mutual respect between friends and educators
	Trust the decisions of friends
Nationalist	Doing activities with friends of different religions, ethnicities, tribes, with other people.
	Use Indonesian when communicating with educators and friends
	Maintain the cleanliness of the classroom and school environment
Integrity	Doing assignments by not imitating the work of his friends
	Comply with the schedule of assignments and study hours at school
Mutual cooperation	Help the group to complete a task
	Provide information to friends and educators
Independent	Look for information related to subject matter from various sources or ask questions
	Complete the task to the fullest
	Completing assignments from educators on time

The number of students who have reached a certain category is expressed in percent using the equation (Sudijono, 2011)

$$P = fN \times 100\%$$

Information :
P = Percentage Number
f = The frequency you are looking for is percentage
N = Number of Samples

The data analysis technique used is descriptive statistical techniques in which aspects of character education are analyzed by determining the percentage value of each student's answers which are then calculated on average based on aspects of character education. the mean values are categorized as in table 2.

Table 2. Category Aspects of Character Education

| Nilai (%)	Category
40	Very low
41 – 57	Low
58 – 75	Medium
76 – 92	High
93	Very high

RESULTS

Based on the results of research conducted at fifth grade elementary schools, data acquisition was obtained from the results of distributing questionnaires to students about character education through RADEC learning on water pollution material which was measured based on the emergence of aspects of character education namely religious, nationalist, integrity, mutual cooperation , and independent. The results of the research that has been carried out based on distributing questionnaires to students, that character education through RADEC learning can mostly show the existence of character aspects that emerge after learning is carried out. The results obtained are based on the character aspects in the table below:

Table 3. Religious Aspect

The religious aspect of the statement on the indicator where students can respect each other to their friends and to the teacher, the statement questions obtained 76.20% of students choosing SS (strongly agree) and 23.80% of students choosing S (agree) on the statement questions. The religious aspect of the indicator believes in what friends decide to get 90.50% of students choose S (agree) and 10% of students choose TS (Disagree).

Table 4. Nationalist Aspect
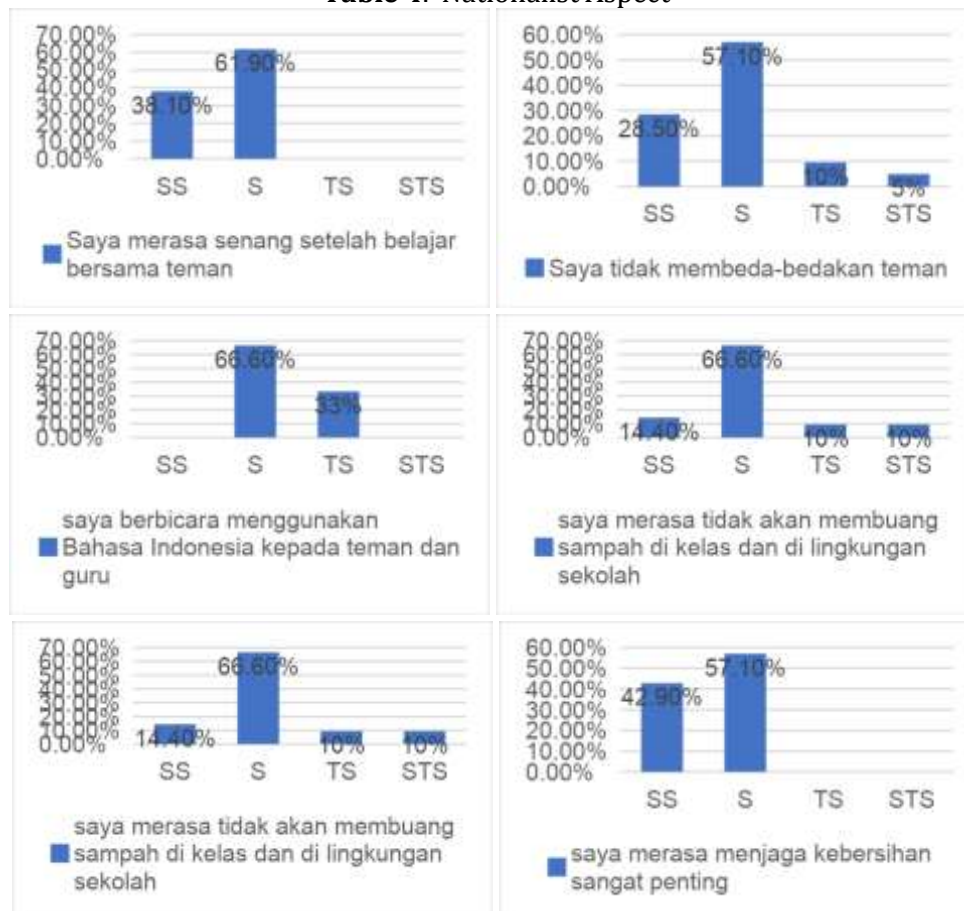
Then table 4 on the Nationalist aspect where the indicators raised about carrying out activities with friends who have different religions, ethnicities, ethnicities, with other people on the indicator feel happy with fellow students get 38.10% of students choosing SS (strongly agree) and 61, 90% of students chose S (strongly agreed) and the second indicator did not differentiate friends obtained 28.50% of students chose SS (strongly agreed), 57.10% of students chose S (agreed), 10% of students chose TS (disagree), and 5% of students chose STS (strongly disagree). Then on the indicator students communicate using Indonesian with their friends and the teacher, 66.60% of students choose S (agree) and 33% of students choose TS (disagree). Furthermore, on the indicator of students keeping the environment clean both in class and school in the first statement question number, 14.40% of students chose SS (strongly agree), 66.60% of students chose S (agree), 10% of students chose TS (disagree). , and 10% of students chose STS (strongly disagree), and the indicator of maintaining cleanliness is very important obtaining 42.90% of students choosing SS (strongly agree) and 57.10% of students choosing S (agree).

Based on the data acquisition, it emerges that students have a sense of nationalism which can be seen from the three indicators where S (agree) 61.90% in the medium category, S (agree) 57.10% in the medium category, S (agree) 66.60% in the medium category, and S (agree) 57.10% in the medium category. Therefore the RADEC learning that is carried out can bring out the character of students in the nationalist aspect which includes character education.

Table 5. Aspects of integrity

In table 5, the aspect of integrity where the indicators that appear do not imitate the work assignments done to their friends, 19% of students choose SS (strongly agree) and 81% of students choose S (agree). The next indicator on the aspect of integrity regarding being able to comply with work schedules and study hours at school obtained 14.40% of students choosing SS (strongly agree), 71.20% of students choosing S (agree), and 14% of students choosing TS (disagree). Based on the results of this study, character education on the integrity aspect can be raised after RADEC learning where the choice of S (agree) 81% is in the high category, and S (agree) 71.2% is in the medium category.

Table 6. Aspects of Mutual Cooperation

Table 6 on the mutual cooperation aspect where the first indicator raises students to be able to help the group in completing the task to obtain 4.90% of students choosing SS (strongly agree), 66.60% of students choosing S (agree), 29% of students choosing TS (disagree), and Table 13 for the second statement obtained 14.20% of students choosing SS (strongly agree), 81% of students choosing S (agree), and 5% of students choosing TS disagree. Then table 14 the second indicator on the mutual cooperation aspect which raises being able to provide information to friends and teachers obtains 28.50% of students choosing SS (strongly agree) and 71.50% of students choosing S (agree). Based on the results of this study, RADEC learning can bring out aspects of mutual cooperation in both character indicators. It can be seen from students choosing S (agree) 66.6% in the medium category, S (agree) 81% in the high category, and S (agree) 71 .5% in the medium category.

Table 7. Independent aspect

Table 7 on the independent aspect where the first indicator raises students to be able to find information related to subject matter from various sources and ask questions to obtain 28.50% of students choosing SS (strongly agree), and 71.50% of students choosing S (agree). Furthermore, the second indicator led to students being able to complete the task optimally while the percentage obtained 23.80% of students chose SS (strongly agreed), 71.40% of students chose S (agreed) and 5% of students chose TS (disagree). Then the third indicator 14.20% of students choose SS (strongly agree), 81% of students choose S (agree) and 5% of students choose TS (disagree). Based on the results of this study, the students chose the largest percentage, namely S (agree) 71.5% in the medium category, S (agree) 71.4% in the medium category, and S (agree) 81% in the high category, so that the use of RADEC learning can bring up independent aspects for students in implementing learning activities where independent aspects are from aspects of character education.

DISCUSSION

Based on the results of the study, from the five aspects of character education, namely the first religious aspect, 76.2% of students chose SS (strongly agreed) in the high category, and 90.5% of students chose S (agreed) in the high category, the two nationalist aspects obtained 61 .9% of students chose S (agreed) medium category, 57.1% of students chose S (agreed) low category, 66.6% of students chose S (agreed) medium category, 66.6% of students chose S (agreed) medium category , and 57.1% of students chose S (agree) in the low category, the three aspects of integrity obtained 81% of students chose S (agreed) in the high category, 71.2% of students chose S (agreed) in the medium category, the four aspects of mutual cooperation received 66, 6% of students chose S (agreed) medium category, 81% of students chose S (agreed) medium category, and 71.5% of students chose S (agreed) low category, and the five independent aspects obtained 71.5% of students chose S (agreed)) low category. So from the results of this study it can be seen

that there are several aspects that have very high, medium, and high categories, but there are several categories that appear in the low category, such as the nationalist aspect in the second and fifth indicators, and the independent aspect in the low category in the first indicator. Therefore, character education through RADEC learning on water pollution material can bring up several aspects in the very high, medium, and high categories, even though there are two aspects in the low category.

The application of character education through the RADEC learning model can be carried out in the implementation of learning where this can be seen when several aspects of character education can be seen after learning. Even though the application of character education in learning activities is not fully applicable directly, but through habituation in each learning process, the application of character education can be accepted by students. The application of character education must invite students to get to know more cognitively then live it affectively and also experience directly (Buhori (dalam Kurniawan, 2017; Maisaro *eat al.*, 2018)).

The learning process does not only change knowledge, but there are changes in attitudes that occur to students. Changes in attitude that occur are influenced by the cognitive skills experienced by students, so educators must have creative skills in the learning concepts that will be carried out such as the use of learning models. Learning is a change in behavior that is carried out consciously and involves cognitive skills and intellectual development, where the use of learning models must be varied so that the learning process can be more meaningful for students to achieve learning goals (Surya, 2017).

Learning using the RADEC learning model has several syntaxes that can involve cognitive skills and intellectual development, where the first syntax, namely read, students are required to read before carrying out further learning activities. In this read syntax, students are expected to have prior knowledge so that the application of subsequent knowledge can be better understood by students, so that the application of character aspects can also be applied at the beginning of the syntax in this RADEC learning model. Pre-reading activities can not only develop students' reading skills but are able to develop character towards students (Abidin, 2012). As for according to research conducted by (Sukmawati et al., 2021) that online learning through the RADEC learning model can bring up character aspects in each syntax, namely, at the read, answer, discuss and explain, and create stages.

CONCLUSION

Character education after RADEC learning shows that students can apply aspects of character such as religious aspects, nationalist aspects, integrity aspects, mutual cooperation aspects, and independent aspects. Based on the categories of the five aspects, there are several categories of very high, high and medium, although there are low categories such as the nationalist aspect and the independent aspect. Therefore, it can be concluded that character education through RADEC learning on pollution material can apply several aspects of character. Then the use of the RADEC learning model can be an alternative for educators to apply in the implementation of learning.

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