Thematic Learning Plans with the RADEC Learning Model in Building Students' Environmental Care Character in Elementary Schools

Arif Utsman[1*], Markhamah[2], Laili Etika Rahmawati[3], Minsih[4], Choiriyah Widyasari[5] (iD)

[1,2,3,4,5] Magister Pendidikan Dasar, Universitas Muhammadiyah Surakarta, Indonesia

A B S T R A K

Pentingnya pemahaman guru sekolah dasar terhadap perencanaan pembelajaran tematik yang sangat berpengaruh terhadap proses pembentukan karakter siswa untuk peduli lingkungan. Terkait pentingnya perencanaan pembelajaran tematik tersebut, model pembelajaran yang cocok dalam membentuk karakter siswa untuk peduli lingkungan ialah model pembelajaran RADEC. Tujuan penelitian ini ialah untuk menganalisis perencanaan dan pelaksanaan pembelajaran tematik dengan model RADEC untuk meningkatkan karakter pedulli lingkungan. Desain penelitian yang digunakan yakni deskripsi eksploratif. Teknik pengumpulan data menggunakan observasi, wawancara, dan dokumentasi. Teknik analisis data yang digunakan ialah reduksi data, data display, dan verifikasi data. Hasil penelitian menunjukkan bahwa guru memahami cara menyusun perencanaan pembelajaran tematik dengan model pembelajaran RADEC di Sekolah Dasar. Pelaksanaan pembelajaran tematik dengan model pembelajaran RADEC yakni kegiatan pendahuluan meliputi kegiatan pembelajaran yang dilaksanakan guru antara lain menyiapkan siswa baik secara psikis dan fisik, membaca doa, serta menanyakan kabar siswa, lalu pada kegiatan inti guru mencoba memfasilitasi siswa dalam membaca, menjawab, berdiskusi, menjelaskan, dan mengkreasi sesuai dengan sintaks-sintaks yang terkandung dalam model pembelajaran RADEC.

A B S T R A C T

The importance of elementary school teachers' understanding of thematic learning planning dramatically influences forming students' character to care for the environment. Regarding the importance of thematic learning planning, a suitable learning model for shaping students' character to care for the environment is the RADEC learning model. This study aims to analyze the planning and implementation of thematic learning with the RADEC model to increase the character of caring for the environment. The research design used is the explorative description. Data collection techniques using observation, interviews, and documentation. Data analysis techniques are data reduction, display, and verification. The study results show that teachers understand how to develop thematic learning plans using the RADEC learning model in elementary schools. Implementation of thematic learning with the RADEC learning model, namely preliminary activities, includes learning activities carried out by the teacher, including preparing students both psychologically and physically, reading prayers, and asking how students are doing. Then in the core activities, the teacher tries to facilitate students in reading, answering, discussing, explaining, and creating according to the syntax contained in the RADEC learning model.

1. INTRODUCTION

Learning developed in the independent curriculum is based on integrated thematic learning. The thematic learning process is not the same as the conventional learning process (Diani & Sukartono, 2022; Hidayah, 2015; Pratama et al., 2020). Thematic learning emphasizes student participation in an active learning process, where this gives students direct experience and trains them to discover the various knowledge they are learning. Thematic learning is learning that is arranged in the form of themes based on the content of several subjects that are combined or integrated (Laksana et al., 2019; Siregar et al., 2022; Zaki et al., 2020). In addition, thematic learning is a learning strategy that is applied to elementary school students, with the breadth and depth of curriculum implementation which provides many opportunities for students to bring dynamics into their education.

In implementing the independent curriculum, the teacher's understanding of the Learning Implementation Plan or RPP has a significant effect on the learning process (Darlis et al., 2020; Hidayat et al., 2022; Rahayuningsih, 2020). The prepared of RPP must fulfill each of the listed core competencies. In addition, lesson plans are the first success factor in the learning process (Istiqomah & Prastowo, 2022; Latifah et al., 2020). Proper planning creates learning that motivates students to participate actively and

provides sufficient space to explore new knowledge concepts (Garzón & Acevedo, 2019; Nurcahyani et al., 2022). The success of implementing thematic learning is highly dependent on the understanding of education administrators, namely teachers (Fadilah et al., 2022; Hanannika & Sukartono, 2022). Therefore, teachers need to explore thematic-based learning and be able to successfully apply it so that they can achieve the learning process and learning objectives (Fadilah et al., 2022). Meanwhile, the implementation of learning is the implementation of the lesson plan and includes preparatory activities, core activities and final activities.

However, every school has rules of discipline and habituation of the character it will form (Efendi, 2020; Santika et al., 2022). One of the steps that can be taken is to implement character education that cares for the environment (As-sikah et al., 2022). The process of implementing thematic learning is also inseparable from integrating the values contained in genetic factors and environmental factors, wherein integrating character values in thematic learning means combining character values while students study thematic learning (Santika et al., 2022; Wahyuningsih & Mustadi, 2016). The results of discussions with teachers in one of the elementary schools in Kab. Wonogiri informed that during the thematic learning conducted at this school, the majority of students tended to show less concern for the environment around them, for example when they finished practicing in learning science, the waste that was produced was often scattered and not disposed of in its place, thus increasing the workload of the cleaning staff. at school. Next, the author asked about the implementation of the learning model that was carried out in one of the Kab. In Wonogiri, it turns out that the majority of teachers often use lecture-based learning in this thematic learning. In fact, revealed that in carrying out thematic learning in schools, teachers should pay attention to innovative learning models which greatly influence the development of students' environmental care character (Ananda et al., 2021).

However, the majority of teachers have not been able to carry out learning using innovative learning models in the field. The results of a study, reported that only 15% of elementary to middle school teachers in Java were able to write the syntax for innovative learning models that are commonly used (Fadilah, et al. 2022). This indicates that teachers' misconceptions are related to innovative learning models so that teachers only see that they have carried out innovative learning, but in fact, it has not been implemented. Apart from the syntax of the innovative learning model which is difficult to memorize, it also takes quite a long time in one meeting, so the majority of teachers tend to use lecture models which are considered practical and fast (Cholifah & Saputro, 2022; Safitri et al., 2018; Sopandi, 2019). This has an impact on learning activities which are dominated by assignments and memorization so they do not build students towards the character of caring for the environment at school. The results of the author's observations were made at SD Negeri 1 Pujiharjo Kab. Wonogiri informed that one of the class teachers at the school had become a routine in carrying out this thematic learning using the RADEC learning model in his class. Based on these facts, it is necessary to do an analysis of thematic learning planning at SDN 1 Pujiharjo Wonogiri Regency through the RADEC learning model to build students' character to care about their environment.

From the description above, it is only natural that alternative solutions are needed that can overcome these problems, one of which is by presenting an innovative learning model that is very easy to memorize, the syntax is also in harmony with the character of students at school (Alwis et al., 2020; Kusuma & Hamidah, 2019). Many innovative learning models are offered by experts, but other research, recommend the learning model RADEC (Read Answer Discuss Explain and Create) to be applied (Yulianti et al., 2022). The RADEC learning model is a learning model whose implementation includes reading, answering, discussing, explaining, and creating (Fuziani et al., 2021; Sopandi, 2019). A series of studies on the RADEC learning model has been carried out and show a significant impact on the formation of the character of caring for the environment. Some of these studies, informing that the RADEC learning model can improve elementary school students in forming a caring character for the environment (Sopandi, 2019). The implementation of thematic learning with the RADEC model had a significant effect on the character formation of elementary school students (Y. A. Pratama et al., 2020; Tulljanah & Amini, 2021). The RADEC learning model is better than conventional learning models in building student character in elementary schools. The study aims to analyze in detail the planning and implementation of thematic learning with the RADEC model to increase the character of caring for the environment at SDN 1 Pujiharjo, Wonogiri Regency.

2. METHOD

Research conducted by this writer is a type of qualitative research. "Qualitative research is a research method based on the philosophy of postpositivism, which is used to examine a natural condition of an object. The planning and implementation of thematic learning with the RADEC model shapes the

character of caring for the environment at SDN 1 Pujiharjo, Wonogiri Regency (Rukminingsih et al., 2020). The research subjects were teachers of grades 1 to 6 at SDN 1 Pujiharjo, Wonogiri Regency. The study approach uses qualitative research with an exploratory, descriptive design. The location of research was carried out at SDN 1 Pujiharjo Wonogiri Regency with the consideration that the school is an elementary school-level education unit where several teachers have implemented learning with the RADEC model. The school is close to where the author lives, so it is affordable in terms of cost so in terms; therefore, the writer is interested in doing research in that school. Method of Data collection techniques used is observation, documentation, and interviews. The instrument in this study was a questionnaire designed to carry out the interview process. Data analysis techniques use analysis based on Miles and Huberman, which includes reduction, data display, and data vacation (Diani & Sukartono, 2022).

3. RESULT AND DISCUSSION

Result

From some of the data that the author managed to collect and analyze further, it gave results regarding the findings from the data in the form of thematic learning plans with the RADEC model, implementation of thematic learning with the RADEC model, and the teacher's role to shape the characteristics of students who care about the environment in learning thematic through the RADEC model at SD Negeri 1 Pujiharjo, Wonogiri Regency. The validation test process is carried out through the triangulation method. The author uses the triangulation method to corroborate the information obtained through interviews compared with the results of documentation and observations. From the information that was successfully received through the interview process which was conducted and followed by study documentation and observations carried out at SDN 1 Pujiharjo Wonogiri Regency, it is presented in the Table 1.

Table 1. Results of Analysis of the Completeness of Thematic Learning Model RADEC

Completeness Aspects Observed	Document	Teacher at SDN 1 Pujiharjo, Wonogiri Regency					
		Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Basic Thematic Learning Planning Analysis of Syllabus and Teacher's Book	Syllabus	√	√	√	√	√	√
	Teacher's Book	X	√	√	X	X	√
	Graduate Competence Standard	√	√	√	√	√	√
	Core Competency	√	√	√	√	√	√
	Basic Competency	√	√	√	√	√	√
	Indicators	X	√	√	X	√	√
Main Material Writing	Subject matter	X	√	√	X	X	√
An overview regarding the Application of the RADEC Learning Model	Write down the RADEC learning model	√	√	X	X	√	X
	RADEC learning model syntax	X	√	X	√	X	√
The description of the RADEC model can shape the character of caring for the environment	In Learning Activities	√	√	√	√	√	√
Completeness Percentage Average		**70%**	**100%**	**80%**	**60%**	**70%**	**90%**
				78.33%			

From Table 1 above, it can be understood that the majority of teachers have studied the steps that must be carried out in making this integrated thematic-based lesson plan. This is by the duties assumed as teachers of each class, where some of the arguments presented are teacher guidelines in carrying out syllabus studies in the form of analysis of graduate competency standards, core competencies, basic competencies, and indicators as well as analysis related to teacher books. In addition, the planning

process used by the Pujiharjo 1 SDN class teacher was downloaded from the internet and then edited according to the needs of each class. However, in the teacher's process of preparing lesson plans, frequent downloads from the internet make the learning process less effective, because it is not adapted to student learning skills, availability of learning resources, learning media, and environmental conditions where students live. Then, the understanding of most teachers regarding the description of the RADEC learning model compiled in this lesson plan is very good, this can be seen when most teachers explained that the RADEC learning model used can be seen from the learning syntax arranged in the core activities. Based on a series of descriptions related to thematic learning plans using the RADEC model, the authors found that the majority of SD Negeri 1 Pujiharjo teacher understood and mastered preparing thematic learning plans using the RADEC learning model.

In the application of thematic learning that is carried out at SDN 1 Pujiharjo, usually every elementary school teacher from grades 1 to 6 receives provision from the school principal in the form of curriculum materials, analysis of teaching materials, and socialization regarding the preparation of learning models and analyzing learning models. In supporting the achievement of the process of learning activities, the school facilitates the necessary facilities and infrastructure. As explained in the results of the analysis of thematic learning plans presented by the class teachers at SDN 1 Pujiharjo, it is known that there are teachers in grades 1, 4, and 6. The implementation of thematic learning conducted by teachers at SDN 1 Pujiharjo with the RADEC learning model includes preliminary activities, activities core, and final activities. The following is a description of the implementation of learning carried out at SDN 1 Pujiharjo Kab. Wonogiri that the writer found. Observation Results of Thematic Learning Implementation with the RADEC Model showed in Table 2.

Table 2. Observation Results of Thematic Learning Implementation with the RADEC Model

No	Learning Activity	Learning Syntax	% Attainment	Explanation
1	Preliminary Activities	Apperception and motivation	87	Achieved
		Submission of basic competencies and activity plans	85	Achieved
2	Core Activities	Application Study Materials	87	Achieved
		Learning strategies	85	Achieved
		Application of the RADEC Learning Model	84	Achieved
		Application of thematic learning	87	Achieved
		Utilization of learning resources/media in learning	83	Achieved
		Involvement of students in learning	84	Achieved
		The correct use of language in learning	85	Achieved
3	Closing Activities	Summing up Learning Outcomes	87	Achieved
		Closing Learning	90	Achieved

From Table 2 above, it can be understood that the majority of teachers at SDN 1 Pujiharjo have fulfilled the requirements in carrying out thematic learning with the RADEC learning model, this can be seen in the core activities that the findings produced all lead to the RADEC learning model syntax. As for building the character of caring for the environment, the teacher at SDN 1 Pujiharjo makes creative activities an activity to give students an understanding of the importance of caring for the environment. In addition, another requirement for conducting learning is that the teacher divides student seats into several groups and arranges student seats according to the characteristics of the learning process. While doing the lesson, the teacher also pays attention to the volume and intonation of the voice.

During the learning process, the volume and intonation of the teacher's voice is loud and clear enough for students to hear. Then, when carrying out learning, the teacher uses straightforward and polite language that is easily understood by students. In addition, the class teacher tries to create order, discipline and comfort in the learning process. Then, during the learning process, the teacher also provides reinforcement and feedback on student responses and learning outcomes. The teacher also tries to encourage and reward students for asking questions and expressing opinions. After that the teacher dresses politely, cleanly and neatly, and finally the teacher starts and finishes the learning process according to the allotted time. In carrying out thematic learning through the RADEC model, things that need to be considered apart from the syntax are the way the teacher conveys material in class such as volume and intonation that must be considered, neat and polite clothing, and so on that encourage students to be enthusiastic about learning.

Thematic learning is learning on a theme that connects several subjects that share useful learning knowledge for students in elementary schools. In the learning process, it is necessary to consider the principles and achievement of the goals designed in the learning process to update students' knowledge. Learning involves mental processes, touching feelings, experiencing, and active thinking. In the process, when an individual learns, he will feel a change in behavior and display learning outcomes as a benchmark that he can understand the lessons he receives (Istiqomah, & Prastowo, 2022). The results of data collection through interviews, observation, and documentation obtained information that the teacher's way of planning thematic learning to instill the character values of caring for the environment in grades 1 to 6 of SDN 1 Pujiharjo, namely when the teacher plans to learn, the RPP integrates the character of caring for the environment, later in the learning process stage the teacher strengthens at every stage of learning. During the core activities, the teacher and students will ask each other questions related to how good the environment is, and what attitudes towards the environment and environmental care activities are. The role of the teacher in forming the character of caring for the environment through thematic learning at SDN 1 Pujiharjo did not all run smoothly and some several supports and obstacles occurred in forming the character of caring for the environment through thematic learning.

From the research conducted at SDN 1 Pujiharjo, the character of caring for the environment has been carried out both in learning activities and outside of learning hours, even though they have implemented the character of caring for the environment through thematic learning activities, teachers still experience several obstacles in shaping the character of caring for the environment at SDN 1 Pujiharjo, namely factors the socio-economic differences of students which can affect other students who are already carrying out environmental care, and not all students are continuous in carrying out environmental care activities. Supporting factors such as teacher performance in teaching, directing, and guiding students in the learning process, and the role of school principals and teachers who are active in environmental activities, as well as facilities and infrastructure in the school environment and routine weekly activities can support the process of forming student character for care about the environment (Suyono et al., 2017). The following is the role of the teacher at SDN 1 Pujiharjo in shaping the character of caring for the environment through thematic learning, including exemplary and habituation.

The exemplary form is also applied by the teacher as someone whose attitudes and behavior are imitated by students. The exemplary form that the teacher does is by disposing of trash in its place, not damaging the environment, and participating in caring for and protecting the environment, both the classroom environment and the school environment. The teacher as a person who is respected by students in the class should provide examples of good behavior at school such as dressing neatly and politely, speaking politely, entering class on time, and others so that children can imitate the actions of the teacher, while attitudes that tend to be favoritism by only paying attention to smart students, while students who have less ability are not given much attention, often leaving the class when the teaching and learning process is taking place which results in classroom conditions that are increasingly not conducive, should not be carried out in schools (Suyono et al., 2017). It is hoped that teachers are not only educators in schools but also parents and friends who are patient and loving, who can be invited to exchange ideas or can give advice. They are always close to students and understand the problems students experience. We believe that if we want our students to be smart and successful, there must be three elements willingness, sincerity/sincerity, and seriousness in educating students. So that the teacher is not a figure to be feared but becomes someone who is loved and respected, but also respected by students.

The role of the teacher in forming the character of caring for the environment through thematic learning is carried out by habituation. Habituation is behavior that is carried out routinely and has been going on for a long time by students and teachers. In this case, the teacher at SDN 1 Pujiharjo familiarizes students that if learning has not started, students clean the classroom so that during the learning process the conditions are more comfortable, they are always efficient in energy use and they can sort plastic waste. Habituation carried out by diving teachers at school can be carried out including praying before starting activities to accustom students to praying before starting all activities; The red and white flag salute aims to instill a spirit of nationalism and pride as a nation in students, the red and white flags that have been installed in each class and instructions are led by scheduled officers; Dhuhur prayer in the congregation; Pray at the end of the lesson; Infaq students; class cleanliness; Make it a habit to greet and shake hands with teachers, employees, and fellow students; Get in the habit of asking permission to enter/leave a class or room; Get used to helping or helping others; Accustomed to channeling aspirations through media available at school, such as wall magazines and guidance counseling vent boxes; Familiarize yourself with consulting teachers and/or other teachers as needed.

Integrated thematic learning has several characteristics. The characteristics of integrated thematic learning are making students the center of learning, the learning relates several subjects combined with the same concept, the separation between subjects is not clear, and the learning is not rigid and fun (Sari

et al., 2018). The characteristics of students in learning are children who are active, constructive, solve problems, produce hypotheses, and test them. They take their hypothesis from the results of the learning process and test it based on their hypothesis. The integration between the characteristics of students with the characteristics of integrated thematic learning will make their learning outcomes better. The observation process related to the implementation of the learning process was carried out in class IV at SDN 1 Pujiharjo. Acceptance of learning used in class with the RADEC model. The learning approach with the RADEC model applied by class IV teachers at SDN 1 Pujiharjo functions to improve thinking skills. According to the fourth-grade teacher at SDN 1 Pujiharjo, the RADEC learning model is recommended to be applied to elementary schools, because this model can be easily understood in its implementation, allows students to acquire behavior, various knowledge according to their skill needs in the 21st century, namely thinking with critical, problem-solving, collaboration, relationship and creative.

Students are invited to be active, critical, and have a conceptual grasp of learning material. This is following opinion, encouraging students to be active, think critically in learning, think creatively, provide opportunities for students to study material through pre-learning assignments (Handayani et al., 2019). The implementation of the RADEC model in learning applies the five steps proposed by (Handayani et al., 2019), the main core of the RADEC model namely: (1) Read, where students read in books that are by the lessons that will be held in class; (2) Answer, students respond to pre-learning questions before the learning process in class. This activity is implemented independently at home. At this stage the teacher can also find out concepts that are poorly understood by students and can then be discussed with students in class together; (3) Discuss, students learn to form groups of two to four individuals to negotiate pre-learning answers, the teacher can recognize what students need; (4) Explain, presenting the material that has been discussed, sources appointed from their representatives; (5) Create, students generate creative ideas such as formulations on investigative questions, or problem-solving/solutions. The creative ideas are related to the material that has been mastered.

Nowadays, the development of anything is very rapid, including in the field of knowledge, for example, there are many new learning models developed by experts such as the RADEC model. The impact in the field of knowledge can encourage changes in teaching from just remembering facts done with lectures to turning into the encouragement of critical thinking skills. One solution is to apply integrated thematic learning (Husain & Muslim, 2021). The reason for choosing thematic learning is learning on themes that integrate various subjects that provide various benefits in learning knowledge for students in elementary schools (Sari et al., 2018).

Discussion

Based on the results of observations and interviews, the findings obtained are that the RADEC model can be applied to integrated thematic learning. The five stages of this model are carried out in thematic learning at SDN 1 Pujiharjo using various media by utilizing both synchronous and asynchronous multimedia. Even though it is carried out in thematic learning in elementary schools, the five stages of this model can facilitate and stimulate students to develop knowledge about environmental preservation sustainably, critical and creative thinking skills to find ideas to be able to find solutions in overcoming environmental problems and habituate attitudes and behavior in preserving the environment in a sustainable manner.

In the first stage, namely the reading stage, the teacher gives instructions for students to read textbooks and various references according to concepts that have been studied independently at home. Instructions for reading are given by the teacher before the learning process is carried out, and is usually done 1 week before the themes are taught, for example at the end of the learning process on theme 7 when discussing theme 8. Reading activities can stimulate students to get used to and develop literacy skills related to environmental preservation (Gading et al., 2019; Kurniawati & Koeswanti, 2020). The activity of reading various texts, both fiction and non-fiction, which describe examples of sustainable behavior regarding environmental preservation for now and in the future, stimulates students to tend to act like what is exemplified in the reading material. This has a positive impact on students because through reading activities students will have knowledge and understanding that are constructed independently so that during the learning process, students already have the provision of understanding to be explored even better, while at the same time providing habituation for students to behave as exemplified in the text. reading so that environmental preservation behavior can be grown (Apriliani & Radia, 2020; Maulana et al., 2022).

After reading activities, the second stage is students answering pre-learning questions given by the teacher. The pre-learning questions developed contain concepts regarding sustainable development in the dimensions of environmental preservation which are presented in student reading material at the reading stage. The teacher stimulates students to answer pre-learning questions based on the knowledge

gained at the reading stage (Fathiara et al., 2019; Maryani et al., 2017). Pre-learning questions are given to each student asynchronously. The pre-learning questions that have been answered are then informed to be collected within a certain period according to the provisions of the teacher. The pre-learning questions given by the teacher are used to stimulate students to understand the reading and the concepts to be learned. Through these pre-learning questions, the teacher can collect and classify the level of difficulty of concepts based on student answers, so that they can see the level of student knowledge regarding environmental preservation so that the teacher can choose all concepts to choose which concept will be discussed further, namely difficult questions and worth discussing (Mariamah et al., 2022; Rusmono & Alghazali, 2019). Also at this stage, students practice building the character of initiative or independence to seek answers based on the sources of information they read (Nurcahyani et al., 2022; Trisiana et al., 2019).

The third stage is the discussion stage, students discuss and agree on answers to the pre-learning questions given by the teacher so that students get agreement on the correct answers. Based on the interview results, the findings obtained were that the teacher experienced difficulties in carrying out the discussion stage because they could not ensure the involvement of all students in the discussion (Manullang et al., 2022; Sari et al., 2014). Therefore, the teacher divides students into small groups and stimulates all group members to engage in discussion. The teacher distributes students with various kinds of cognitive abilities, so that there are students who are smart, active, passive, and need tutoring in one group. The teacher ensures that all students in the group are involved in the discussion and ultimately understand the concept of environmental preservation (Jaya, 2017; Rikawati & Sitinjak, 2020). Some teachers carry out this stage synchronously, because they can meet directly with students, so that students can discuss more actively in discussions. The discussion stage trains and develops student competence in the realm of knowledge and thinking skills. This stage stimulates students to think critically and collaborate with friends to agree on answers to pre-learning questions given by the teacher so that students get agreement on the correct answers (Nurcahyani et al., 2022; Suyeni et al., 2016). In addition to developing critical thinking skills, students are instilled the character of cooperation and respecting the opinions of friends.

In the fourth stage, namely the explaining stage, students convey their group answers in front of the class. The teacher stimulates students to ask questions, refute, respond or add to what other students say during presentations. At this stage, the teacher acts as a moderator to determine which groups will present, ask questions, or other things to clarify the material (Alaviah et al., 2016; Alwis et al., 2020). In addition to being a moderator, the teacher can act as a presenter if in this activity all students cannot answer questions asked by other students, and provide reinforcement regarding the concept of the material being discussed, and respond to student opinions (Moses et al., 2019; Scull et al., 2020). This stage trains students to be able to have communicative thinking skills, so students can communicate the results of group discussions that have been carried out at a later stage (Nurcahyani et al., 2022; Suyeni et al., 2016). Activities at this stage foster student character to be confident in conveying the results of the discussion.

In the last stage, namely the making stage, students are encouraged to think of creative ideas. Student activities at this stage are agreeing, realizing, and reporting product ideas. Students work in groups and present their progress step by step at each meeting. Teachers can monitor these moments in real-time and students can report what they have done. This stage stimulates students to develop creative ideas related to environmental preservation and development goals to be achieved. The creative ideas presented by the students varied widely, starting from making portable trash cans for recycling, making pictures telling stories about clean water and proper sanitation to making bicycle transportation services from home to school for students who are located near schools. Activities at this stage stimulate students to express ideas to be able to find solutions to environmental problems that occur, these ideas will foster environmentally friendly behavior that will be applied in everyday life (Kusuma & Hamidah, 2019; Rahayu et al., 2017).

Based on the findings obtained from these five stages, the RADEC learning model encourages students to increase students understanding of the concept of environmental preservation, develop various 21st-century skills such as critical, creative, collaborative and communicative thinking, and foster environmentally friendly attitudes and behaviors in everyday life (Kim et al., 2019; van Laar et al., 2019).. These three competencies are competencies that can be developed for students so that students can apply the principles of sustainable development in the dimensions of environmental preservation in their daily lives from an early age. Habituation from an early age is expected to be sustainable attitudes and values will be internalized in students. These attitudes and values will encourage everyone to live life with the principles of sustainable development so that they can overcome various environmental problems (Maulana et al., 2022).

4. CONCLUSION

Based on the results of research and discussion, it can be concluded that the teacher's description in understanding the steps towards preparing lesson plans includes syllabus analysis, studying teacher books, studying SKL, KI, KD, and Indicators, then making lesson plans that have been downloaded on the internet without being adjusted with the condition of students' skills and the surrounding environment. In addition, the implementation of thematic learning with the RADEC model at SDN 1 Pujiharjo is by the concepts in the syntax of the RADEC learning model, which is characterized by the teacher carrying out learning according to the theme, the teacher using learning steps in the form of facilitating students to read, answer, discuss, explain, and create.

5. REFERENCES

Alaviah, R., Oesman, A. M., & Wardhana, C. K. (2016). The Correlation between Teacher Teaching Skill Perception with the Students' Motivation of Learning Japanese at MAN 2 Semarang. *CHI'E: Journal of Japanese Learning and Teaching*, *5*(2), 51–54. https://doi.org/10.15294/chie.v5i2.19500.

Alwis, A., Marsidin, S., Effendi, M., & Jama, J. (2020). Developing Academic Supervision Model To Improve Islamic Education (PAI) Teachers' Performance At Madrasah Aliyah (Islamic Senior High Schools). *Digital Press Social Sciences and Humanities*, *6*, 00014. https://doi.org/10.29037/digitalpress.46379.

Ananda, R., Fadhilaturrahmi, F., & Hanafi, I. (2021). Dampak Pandemi Covid-19 terhadap Pembelajaran Tematik di Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 1689–1694. https://doi.org/10.31004/basicedu.v5i3.1190.

Apriliani, S. P., & Radia, E. H. (2020). Pengembangan Media Pembelajaran Buku Cerita Bergambar Untuk Meningkatkan Minat Membaca Siswa Sekolah Dasar. *Jurnal Basicedu*, *4*(4), 994–1003. https://doi.org/10.31004/basicedu.v4i4.492.

As-sikah, S., Nuraeni, Y., & Magdalena, I. (2022). Implementasi Pembelajaran Tematik Integratif Berbasis Pendidikan Karakter di SDN Pinang 1 Kota Tangerang. *Jurnal Pendidikan dan Konseling*, *4*(4), 6536–6542. https://doi.org/10.31004/jpdk.v4i4.6524.

Cholifah, T. N., & Saputro, G. I. (2022). Pengembangan Media Pembelajaran Vidam (Video Animasi) Pembelajaran Tematik Untuk Meningkatkan Minat Belajar Siswa Kelas 3 SD. *Primary Education Journals (Jurnal Ke-SD-An)*, *2*(2), 120–130. https://doi.org/10.33379/primed.v2i2.1613.

Darlis, N., Farida, & Miaz, Y. (2020). Pengembangan Desain Pembelajaran Model Assure Berbasis Problem Based Learning Menggunakan Komik di Sekolah Dasar. *Jurnal Basicedu*, *5*(1), 334–342. https://doi.org/10.31004/basicedu.v5i1.689.

Diani, A. A., & Sukartono. (2022). Peran Guru dalam Penilaian Autentik pada Pembelajaran Tematik di Sekolah Dasar. *Jurnal basicedu*, *6*(3), 4351–4359. https://doi.org/10.31004/basicedu.v6i3.2831.

Efendi, N. (2020). Implementasi Karakter Peduli Lingkungan di Sekolah Dasar Lolong Belanti Padang. *Jurnal Komunikasi Pendidikan*, *4*(2), 62. https://doi.org/10.32585/jkp.v4i2.460.

Fadilah, E., Irianto, A., & Rusminati, S. H. (2022). Penggunaan Media Monopoly Education pada Pembelajaran Tematik di Sekolah Dasar. *Edukatif : Jurnal Ilmu Pendidikan*, *4*(4), 5827–5833. https://doi.org/10.31004/edukatif.v4i4.3319.

Fathiara, A., Badarudin, B., & Muslim, A. H. (2019). Meningkatkan Keterampilan Berpikir Kritis Dan Gemar Membaca Peserta Didik Melalui Model Predict Observe Explain Berbasis Literasi. *Muallimuna : Jurnal Madrasah Ibtidaiyah*, *4*(2), 92–101. https://doi.org/10.31602/muallimuna.v4i2.1863.

Fuziani, I., Istianti, T., & Arifin, M. H. (2021). Penerapan Model Pembelajaran Radec dalam Merancang Kegiatan Pembelajaran Keberagaman Budaya di SD Kelas IV. *Jurnal Pendidikan Tambusai*, *5*(3), 8319–8326.

Gading, I. K., Magta, M., & Pebrianti, F. (2019). Pengaruh Metode Suku Kata Dengan Media Kartu Kata Bergambar Terhadap Kemampuan Membaca Permulaan. *Mimbar Ilmu*, *24*(3). https://doi.org/10.23887/mi.v24i3.21417.

Garzón, J., & Acevedo, J. (2019). Meta-analysis of the impact of augmented reality on students' learning gains. *Educational Research Review*, *27*, 244–260. https://doi.org/10.1016/j.edurev.2019.04.001.

Hanannika, L. K., & Sukartono, S. (2022). Penerapan Media Pembelajaran Berbasis TIK pada Pembelajaran Tematik di Sekolah Dasar. *Jurnal Basicedu*, *6*(4), 6379–6386. https://doi.org/10.31004/basicedu.v6i4.3269.

Handayani, H., Sopandi, W., Syaodih, E., Setiawan, D., & Suhendra, I. (2019). Dampak Perlakuan Model Pembelajaran Radec Bagi Calon Guru Terhadap Kemampuan Merencanakan Pembelajaran Di

Sekolah Dasar. *Jurnal Ilmiah Pendidikan Dasar*, *4*(1). https://doi.org/10.23969/jp.v4i1.1857.

Hidayah, N. (2015). Pembelajaran Tematik Integratif di Sekolah Dasar. *Jurnal Pendidikan dan Pembelajaran Dasar*, *2*(1), 34–49. https://doi.org/10.24042/terampil.v2i1.1280.

Hidayat, A. G., Haryati, T., Pendidikan, S., Sekolah, G., Studi, P., & Sejarah, P. (2022). Pembelajaran Tematik Integratif pada Mata Pelajaran IPS dalam Kurikulum 2013 di SDN Teke Kecamatan Palibelo. *Ainara Journal (Jurnal Penelitian dan PKM Bidang Ilmu Pendidikan)*, *3*(3), 202–210. https://doi.org/10.54371/ainj.v3i3.176.

Husain, M., & Muslim, A. H. (2021). Kompetensi Profesionalisme Guru dalam Penerapan Pembelajaran Tematik Secara Online di Sekolah Dasar Negeri Badakary. *JRIP: Jurnal Riset dan Inovasi Pembelajaran*, *1*(1). https://doi.org/10.51574/jrip.v1i2.76.

Istiqomah, N., & Prastowo, A. (2022). Analisis Pendekatan Saintifik Dalam Perencanaan Pembelajaran Tematik di SD/MI. *Jurnal Pendidikan*, *4*(1), 7–12. https://doi.org/10.33627/gg.v4i1.648.

Jaya, H. N. (2017). Keterampilan Dasar Guru untuk Menciptakan Suasana Belajar yang Menyenangkan. *Didaktis: Pendidikan dan Ilmu Pengetahuan*, *17*(1), 23–35. https://doi.org/10.30651/didaktis.v17i1.1555.

Kim, S., Raza, M., & Seidman, E. (2019). Improving 21st-Century Teaching Skills: The Key to Effective 21st-Century Learners. *Research in Comparative and International Education*, *14*(1), 99–117. https://doi.org/10.1177/1745499919829214.

Kurniawati, R. T., & Koeswanti, H. D. (2020). Pengembangan Media Buku Cerita Bergambar Untuk Meningkatkan Kemampuan Membaca Siswa Kelas 1 Sekolah Dasar. *DIDAKTIKA TAUHIDI: Jurnal Pendidikan Guru Sekolah Dasar*, *7*(1). https://doi.org/10.30997/dt.v7i1.2634.

Kusuma, J. W., & Hamidah, H. (2019). Pengaruh Model Pembelajaran ARIAS dan Cooperative Script terhadap Minat dan Hasil Belajar Matematika. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, *2*(1). https://doi.org/10.24176/anargya.v2i1.3460.

Laksana, D. N. L., Seso, M. A., & Riwu, I. U. (2019). Content and Flores Cultural Context Based Thematic Electronic Learning Materials: Teachers and Students' Perception. *European Journal of Education Studies*, *5*(9), 145–155. https://doi.org/10.5281/zenodo.2542946.

Latifah, N., Hasan, N., & Fitria, Y. A. (2020). Pengembangan Media Pembelajaran Sparkol Videoscribe Terhadap Keterampilan Menulis Siswa Kelas Vi Sekolah Dasar Negri Sukamurni 1 Kabupaten Tengerang. *Jurnal Madrasah Ibtidaiyah*, *6*(1), 40–48. https://doi.org/10.31602/muallimuna.v6i1.3463.

Manullang, J., Sidabutar, H., & Manullang, A. (2022). Efektifitas Metode Diskusi dalam Pembelajaran Pendidikan Agama Kristen pada Masa Pandemi Covid-19. *Jurnal Imiah Pendidikan dan Pembelajaran*, *5*(3), 502–509. https://doi.org/10.23887/jipp.v5i3.39268.

Mariamah, Putrayasa, I., & Sudiana, I. (2022). Penerapan Pembelajaran Inovatif Dalam Mengembangkan Kemampuan Membaca Siswa Sekolah Dasar. *Jurnal Ilmiah Mandala Education (JIME)*, *8*(1). https://doi.org/10.36312/jime.v8i1.2797.

Maryani, N., Ichsan, M., & Khairunnisa. (2017). Signifikansi Metode Guide Reading Terhadap Motivasi Belajar Siswa Dalam Teori Membaca Nyaring Guide Reading Method On Students ' Learning Motivation In Reading Loudly Lesson. *Didaktika Tauhidi: Jurnal Pendidikan Guru Sekolah Dasar*, *4*(2), 126–139. https://doi.org/10.30997/dt.v4i2.924.

Maulana, Y., Sopandi, W., Sujana, A., Robandi, B., Agustina, & Rosmiati, I. (2022). Development and Validation of Student Worksheets Air Theme based on the RADEC Model and 4C Skill-oriented. *JPPIPA: Jurnal Penelitian dan Pendidikan IPA*, *8*(3). https://doi.org/10.29303/jppipa.v8i3.1772.

Moses, I., Admiraal, W., Berry, A., & Saab, N. (2019). Student-Teachers' Commitment to Teaching and Intentions to enter the Teaching Profession in Tanzania. *South African Journal of Education*, *39*(1). https://doi.org/10.15700/saje.v39n1a1485.

Nurcahyani, R. M., Utaminingsih, S., & Ismaya, E. A. (2022). Analisis Pembelajaran Tematik Kelas IV pada Pembelajaran Tatap Muka di Sekolah Dasar. *Edukatif : Jurnal Ilmu Pendidikan*, *4*(4), 5674–5684. https://doi.org/10.31004/edukatif.v4i4.3210.

Pratama, I. G. D. J., Dantes, N., & Yudiana, K. (2020). Thematic Learning Plan With A Nature Of Science Learning Model In The Fourth Grade Of Elementary School. *International Journal of Elementary Education*, *4*(4), 447–453. https://doi.org/10.23887/ijee.v4i4.27208.

Pratama, Y. A., Sopandi, W., Hidayah, Y., & Trihatusti, M. (2020). Pengaruh model pembelajaran RADEC terhadap keterampilan berpikir tingkat tinggi siswa sekolah dasar. *JINoP (Jurnal Inovasi Pembelajaran)*, *6*(2), 191–203. https://doi.org/10.22219/jinop.v6i2.12653.

Rahayu, T., Syafril, S., Wati, W., & Yuberti, Y. (2017). The application of STAD-cooperative learning in developing integrated science on students worksheet. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, *6*(2). https://doi.org/10.24042/jipfalbiruni.v6i2.1933.

Rahayuningsih, S. (2020). Animation media of animal husbandry thematic science learning to stimulate scientific attitude in early childhood. *International Journal of Scientific and Technology Research*. https://doi.org/10.23887/jet.v3i1.17959.

Rikawati, K., & Sitinjak, D. (2020). Peningkatan Keaktifan Belajar Siswa dengan Penggunaan Metode Ceramah Interaktif. *Journal of Educational Chemistry (JEC)*, *2*(2), 40. https://doi.org/10.21580/jec.2020.2.2.6059.

Rukminingsih, Adnan, G., & Latief, M. A. (2020). Metode Penelitian Pendidikan. Penelitian Kuantitatif, Penelitian Kualitatif, Penelitian Tindakan Kelas. *Journal of Chemical Information and Modeling*, *53*(9), 29.

Rusmono, & Alghazali, M. I. (2019). Pengaruh Media Cerita Bergambar Dan Literasi Membaca Terhadap Hasil Belajar Siswa Sekolah Dasar. *JTP - Jurnal Teknologi Pendidikan*, *21*(3), 269–282. https://doi.org/10.21009/jtp.v21i3.13386.

Safitri, R. W., Primiani, C. N., & Hartini, H. (2018). Pengembangan Media Flashcard Tematik Berbasis Permainan Tradisional Untuk Kelas IV Sub Tema Lingkungan Tempat Tinggalku. *Pendidikan Dasar dan Pembelajaran*, *8*(1), 11. https://doi.org/10.25273/pe.v8i1.1332.

Santika, I. G. N., Suastra, I. W., & Arnyana, I. B. P. (2022). Membentuk Karakter Peduli Lingkungan Pada Siswa Sekolah Dasar Melalui Pembelajaran Ipa. *Jurnal Education and development Institut Pendidikan Tapanuli Selatan*, *10*(1), 207–212. https://doi.org/10.37081/ed.v10i1.3382.

Sari, Mardhiati, & Khutobah. (2014). Penerapan Metode Diskusi dengan Menggunakan Media Gambar Untuk Meningkatkan Aktivitas dan Hasil Belajar Siswa kelas III dalam Pembelajaran Pkn Tema Lingkungan di SDN Sumberlesung 02 Ledokombo Jember. *Jurnal Edukasi UNEJ*, *1*(2), 36–39. https://doi.org/10.0324/sigma.v4i2.594.

Scull, J., M. Phillips, U., Sharma, & Garnier, K. (2020). Innovations in Teacher Education at the Time of COVID19: An Australian Perspective. *Journal of Education for Teaching*, *46*(4), 497–506. https://doi.org/10.1080/ 02607476.2020.1802701.

Siregar, P. S., Marta, E., Efendi, Hasrijal, R., Sari, & Tama, N. (2022). Implementasi Pembelajaran Tematik dalam Pencapaian Standar Proses Kurikulum 2013 di Sekolah Dasar. *Jurnal Basicedu*, *6*(1), 540–551. https://doi.org/10.31004/basicedu.v6i1.1858.

Sopandi, W. (2019). Sosialisasi dan Workshop Implementasi Model Pembelajaran RADEC Bagi Guru-Guru Pendidikan Dasar dan Menengah. *Pedagogia : Jurnal Pendidikan*, *8*(1), 19–34. https://doi.org/10.21070/pedagogia.v8i1.1853.

Suyeni, P. W., Wirya, N., & Ujianti, P. R. (2016). Penerapan Metode Demonstrasi Melalui Permainan Tradisional Magoak-Goakan Untuk Meningkatkan Kemampuan Kerjasama. *Jurnal Pendidikan Anak Usia Undiksha*, *4*(2). https://doi.org/10.23887/paud.v4i2.7805.

Suyono, Titik, H., & Wulandari, I. S. (2017). Implementasi Gerakan Literasi Sekolah pada Pembelajaran Tematik di Sekolah Dasar. *Sekolah Dasar: Kajian Teori dan Praktik Pendidikan*, *26*(2), 116–123. https://doi.org/10.17977/um009v26i22017p116.

Trisiana, A., Sugiaryo, & Rispantyo. (2019). Implementasi Pendidikan Karakter Dalam Pendidikan Kewarganegaraan Sebagai Inovasi Pengembangan Di Era Media Digital Dan Revolusi Industri 4.0. *Jurnal Global Citizen : Jurnal Ilmiah Kajian Pendidikan Kewarganegaraan*, *7*(1). https://doi.org/10.33061/jgz.v7i1.3059.

Tulljanah, R., & Amini, R. (2021). Model Pembelajaran RADEC sebagai Alternatif dalam Meningkatkan Higher Order Thinking Skill pada Pembelajaran IPA di Sekolah Dasar: Systematic Review. *Jurnal Basicedu*, *5*(6), 5508–5519. https://doi.org/10.31004/basicedu.v5i6.1680.

van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2019). Determinants of 21st-century digital skills: A large-scale survey among working professionals. *Computers in Human Behavior*, 93–104. https://doi.org/10.1016/j.chb.2019.06.017.

Wahyuningsih, E., & Mustadi, A. (2016). Pengembangan multimedia lectora pembelajaran tematik-integratif untuk peningkatan nilai karakter siswa kelas iv sekolah dasar. *Jurnal Pendidikan Karakter*, *1*(1). https://doi.org/10.21831/jpk.v0i1.10729.

Yulianti, Y., Lestari, H., & Rahmawati, I. (2022). Penerapan Model Pembelajaran Radec Terhadap Peningkatan Kemampuan Berpikir Kritis Siswa. *Jurnal Cakrawa Pendas*, *8*(1), 47–56. https://doi.org/10.31949/jcp.v8i1.1915.

Zaki, A., Suparno, & Nulhakim, L. (2020). The Role of Teachers in Improving Student Learning Outcomes in Thematic Learning Through The Use of The Environment As a Learning Resource. *Jurnal Ilmiah Sekolah Dasar*, *5*(1), 61–68. https://doi.org/10.23887/jisd.v5i1.30093.