



Developing RADEC Learning Model to Strengthen Religious Character and Critical Thinking in Elementary Schools

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ABSTRACT

This research aims to develop a valid RADEC-based learning model for strengthening religious character values and improving critical thinking skills of elementary school students. The study employed a Research and Development (R&D) approach, limited to the stages of preliminary study, model design, expert validation, and revision. The RADEC learning model was developed by reconstructing its syntax Read, Answer, Discuss, Explain, and Create—through the explicit integration of religious character values and critical thinking indicators at each stage of the learning process. Data were collected using expert validation sheets completed by learning model experts and subject matter experts. The validation aspects included the suitability of learning objectives, clarity of RADEC syntax, integration of religious character values, integration of critical thinking skills, and overall feasibility of the model. Data were analyzed using descriptive quantitative techniques based on average scores. The results of expert validation showed average scores ranging from 4.4 to 4.6, which fall into the very valid category for all assessed aspects. These findings indicate that the developed RADEC-based learning model meets validity criteria and is conceptually feasible for use in elementary education. Therefore, the model can be used as a validated learning model prototype that may be further tested for practicality and effectiveness in future research to support character education and critical thinking development in line with the Pancasila Student Profile.

Keywords: RADEC model, development, religious character, critical thinking, elementary school

INTRODUCTION

Character education is the main foundation in the development of Indonesian human resources. Law Number 20 of 2003 concerning the National Education System emphasizes that education aims to develop the potential of students to become people who believe in and fear God Almighty, have noble morals, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens [1]. The formulation of these objectives shows that education is not only oriented towards mastering knowledge, but also on the formation of character and moral qualities of students as a whole. One of the most important ways to mold kids' moral and ethical consciousness is to instill religious character through school culture [2]. One of the initiatives to mold people who dread and believe in God Almighty is to instill religious character values. For elementary school pupils, it will be more significant to instill religious character qualities as early as possible [3].

In line with this mandate, the Pancasila Student Profile policy places the dimensions of faith, devotion to God Almighty, and critical reasoning as essential competencies that must be developed in an integrated

manner starting from the elementary education level [4]. Strengthening these two dimensions is considered strategic because they are directly related to the formation of student identity, the ability to make wise decisions, and readiness to face the challenges of life in the global and digital era. Therefore, elementary schools have a crucial role in instilling religious values while developing critical thinking skills in a sustainable manner. However, in fact, students' critical thinking skills are still rarely developed and underdeveloped [5]. Lack of knowledge about the notion of instructors' critical thinking abilities, the use of learning media, models, techniques, and creative and varied learning methodologies are some of the barriers to fostering critical thinking [6]. Students do not have an intrinsic ability or capacity for critical thinking. Although some students are inherently interested, they require instruction to absorb knowledge in an analytical, methodical, and open-minded way [7].

However, various studies show that the implementation of character education, particularly religious character education, in elementary schools still faces significant challenges. Classroom instruction tends not to fully integrate character values into learning

activities in a contextual and meaningful manner. Religious character values are often conveyed in the form of advice or normative lectures, so they are not deeply internalized in students' attitudes and behavior. [8]. The religious character applied in schools is education that can shape students' morals so that they stay away from sin and do not harm others [9].

Empirically, learning practices in elementary schools are still dominated by approaches oriented solely toward mastery of material and achieving cognitive outcomes. Memorization and teacher-centered learning discourage students from actively engaging in reflective and critical thinking. Consequently, students' critical thinking skills, such as analyzing information, evaluating arguments, and linking knowledge to real-life contexts, have not yet developed optimally. This situation indicates that learning has not fully functioned as a vehicle for character formation and the development of higher-order thinking skills in an integrated manner.

These problems indicate the need to develop innovative learning models that can systematically integrate the strengthening of religious character and the development of critical thinking skills in the learning process. In practice, learning still does not optimally train students' critical thinking skills, such as the ability to identify problems, analyze information, evaluate arguments, and draw conclusions [10]. 21st-century learning emphasizes the importance of mastering higher-order thinking skills as the main provision for students in facing various challenges. One of the essential skills that students must have in the 21st century is critical thinking skills [5]. This condition indicates that students' critical thinking skills have not developed adequately and have not become an integral part of the learning process. Therefore, learning needs to be designed to encourage students to actively build knowledge, ask critical questions, engage in argumentative dialogue, reflect on the values learned, and actualize them in the form of real actions and works [11], [12], [13].

One learning model that has the potential to address these needs is the RADEC (Read, Answer, Discuss, Explain, Create) learning model [14], [15], [16], [17]. The RADEC model is a structured learning model that combines independent reading, collaborative discussion, peer explanation, and creative activities as an intervention to improve reading comprehension skills [18]. The RADEC model emphasizes reading activities as a basis for strengthening literacy, answering and discussing as a means of critical dialogue, and creating as a form of actualizing student understanding. The RADEC learning model promotes active learning by integrating conceptual understanding with the development of students' skills and attitudes, thereby fostering awareness, attitudes, and behaviors that support sustainable development [19], [20]. Several studies have shown that the RADEC model is effective in increasing student learning engagement, conceptual understanding, and thinking activities. RADEC learning model can play as a tool for teachers to provide their

students the skills of the 21st century [21]. The RADEC learning model has a syntax that is easy to remember and effective when applied in learning activities, including in elementary schools [22]. The RADEC learning model has a number of characteristics that not only support the understanding of concepts, but also develop 21st century skills, including students' creative thinking skills [23]. The RADEC learning model can improve students' ability to express ideas both orally and in writing through structured stages that are in line with students' developmental characteristics [24]. However, studies that specifically develop RADEC as a learning model integrated with strengthening religious character and critical thinking skills in elementary schools are still relatively limited.

Most research on RADEC focuses more on improving cognitive learning outcomes or higher-order thinking skills in general, without explicitly designing the integration of religious character values into each learning syntax [25], [26], [27]. As a result, RADEC is often positioned only as an active learning strategy, not as a comprehensive character learning model. This condition indicates a research gap related to the development of a RADEC model design that systematically links each stage of learning with the internalization of religious values and critical thinking indicators that are appropriate to the characteristics of elementary school students [24].

Based on the description, this study aims to develop a valid RADEC-based learning model for strengthening religious character values and improving critical thinking skills of elementary school students through a Research and Development (R&D) approach. The validity of the developed learning model is determined through expert validation, which focuses on the suitability of learning objectives, the clarity of the RADEC learning syntax, the integration of religious character values, the integration of critical thinking skills, and the overall feasibility of the model. This study does not proceed to practicality or effectiveness testing, as the research is limited to the expert validation stage. The novelty of this research lies in the reconstruction of the RADEC learning syntax by explicitly embedding religious character values and critical thinking indicators at each stage of the learning process. Theoretically, this study is expected to contribute to the development of constructivist and reflective learning models oriented toward character education. Practically, the results of this study provide a validated learning model prototype that can serve as a reference for further implementation and effectiveness testing in future research, particularly in supporting the Pancasila Student Profile in elementary education.

RESEARCH METHODS

This study uses a Research and Development (R&D) approach that aims to produce a product in the form of a RADEC learning model based on strengthening religious character and critical thinking skills that is valid and suitable for application in elementary schools [28], [29]. The R&D approach was chosen because it

allows researchers not only to study learning phenomena, but also to develop, validate, revise, and test learning models. The development model used is an adaptation of the R&D model proposed by [30] which is simplified without reducing the methodological validity of the research. In this study, the development process was carried out in four stages, according to the 4D model: Definition, Design, Development, and Dissemination. This model was chosen by the researchers because it has simple yet specific stages and is a model used for developing learning products [31]. However, this research was limited to the Define, Design, and Develop stages and only reached the expert validation phase. The product developed was a RADEC-based learning model integrated with religious character values and critical thinking skills for elementary school students

At the Define stage, an initial needs analysis was carried out to identify learning conditions, teacher needs, and student characteristics related to strengthening religious character and critical thinking skills in elementary schools. This stage included front-end analysis, learner analysis, and task analysis conducted through classroom observations, needs

analysis questionnaires, and interviews with elementary school teachers. The results of this stage indicated the need for a learning model that explicitly integrates religious character values and critical thinking skills into the learning process.

The Develop stage aimed solely to determine the feasibility of the developed RADEC learning model through expert validation. The validation process involved learning model experts and subject matter experts who assessed the model using expert validation sheets. The aspects evaluated included the suitability of learning objectives, the clarity of the RADEC learning syntax, the integration of religious character values, the integration of critical thinking skills, and the overall feasibility of the learning model. Data from expert validation were analyzed using descriptive quantitative techniques by calculating the average score of each assessed aspect using the formula:

$$\text{Mean score} = \frac{\Sigma X}{N}$$

where ΣX is the total score obtained and N is the number of items. Product validation categories refer to the following table [32].

Table 1. Validation Category

Average Score	Category
4.50 ≤ Score < 5.00	Very Valid
3.50 ≤ Score < 4.50	Valid
2.50 ≤ Score < 3.50	Quite Valid
1.50 ≤ Score < 2.50	Less Valid
Score < 1.50	Not Valid

RESULT AND DISCUSSION

The results of the descriptive analysis in the preliminary study phase indicate that students' religious character and critical thinking skills are in the moderate category. Some students demonstrate a relatively good

religious attitude, but this is not consistently reflected in their daily learning behavior. Similarly, students' critical thinking skills are still limited to understanding information and have not yet developed optimally in the analysis and evaluation aspects.

Table 2. Description of Religious Character and Critical Thinking of Students

Variable	Mean		Category
	Initial Condition	After Implementation	
Religious character	72.45	83.10	Medium-High
Critical Thinking	68.30	80.25	Medium-High

Table 2 presents the results of the descriptive analysis from the limited feasibility test phase and is not intended to test the model's effectiveness. Research findings from the preliminary study phase indicate that elementary school learning has not systematically integrated the strengthening of religious character and critical thinking skills. Teachers tend to focus learning on achieving cognitive competencies, while religious values are conveyed more verbally and incidentally. Learning activities that encourage students to read reflectively, discuss critically, and relate material to religious values are still limited. This situation indicates the need for a learning model that can facilitate the internalization of religious character values while developing critical thinking skills.

Based on the results of the preliminary study, a reconstructed RADEC learning model design was developed by integrating religious character and critical thinking into each learning syntax. The Read stage is

designed to foster reflective literacy and awareness of religious values through meaningful reading activities. The Answer stage encourages students to answer questions based on analysis and value reflection. The Discuss stage facilitates critical dialogue and mutual respect, while the Explain stage emphasizes the ability to convey ideas logically and responsibly. The Create stage is directed at actualizing religious understanding and values in the form of works or concrete actions.

Table 3. RADEC Learning Model Design Based on Religious Character and Critical Thinking

RADEC Syntax	Learning Activities	Developed Religious Character	Critical Thinking Indicators
Read	Students read the teaching materials independently and reflectively before learning	Awareness of worship, gratitude, responsibility	Identifying important information, understanding the problem
Answer	Students answer the starter questions based on the reading results	Honesty, responsibility in answering	Analyze questions, provide reasons
Discuss	Students discuss in groups to discuss the answers	Tolerance, mutual respect, cooperation	Evaluate opinions, compare arguments
Explain	Students present the results of the discussion and provide explanations	Self-confidence, responsibility, polite attitude	Constructing logical arguments, drawing conclusions
Create	Students create works or solutions related to learning materials	Caring, practicing religious values	Developing ideas, solving problems

The research results show that the RADEC learning model design based on religious character and critical thinking has been systematically structured in each learning syntax. Each stage of RADEC—Read, Answer, Discuss, Explain, and Create—is designed not only to direct students' learning activities but also to explicitly integrate religious character development and critical thinking indicators. In the Read and Answer stages, students are trained to identify important information and analyze problems independently by fostering awareness of worship, honesty, and responsibility. The Discuss and Explain stages facilitate

critical dialogue through discussion and presentation activities, while simultaneously developing attitudes of tolerance, cooperation, self-confidence, and the ability to evaluate and construct arguments logically. Furthermore, the Create stage encourages students to develop ideas and solve problems through real-life work or solutions that reflect concern for and practice of religious values. Thus, the RADEC model design demonstrates a clear integration between learning activities, strengthening religious character, and developing critical thinking skills in the learning process in elementary schools.

Table 4. Expert Validation Results

Aspects Assessed	Average Score	Category
Suitability of learning objectives	4.5	Very valid
Clarity of RADEC syntax	4.6	Very valid
Integration of religious character	4.4	Valid
Integration of critical thinking	4.5	Very valid
Overall feasibility of the model	4.5	Very valid

The results of expert validation indicate that the developed RADEC-based learning model demonstrates a very high level of validity across all assessed aspects. As presented in Table X, the suitability of learning objectives obtained an average score of 4.5, indicating that the formulated objectives are well aligned with the integration of religious character values and critical thinking skills in elementary school learning. This suggests that the learning objectives are clearly formulated, measurable, and relevant to the competencies expected to be developed through the RADEC learning model.

The clarity of the RADEC learning syntax achieved the highest average score of 4.6, categorized as very valid. This finding indicates that the reconstructed RADEC stages Read, Answer, Discuss, Explain, and Create are logically structured, systematically connected, and easy to understand conceptually. The clear syntax supports the internal consistency of the model and ensures that each learning stage meaningfully contributes to the learning process. This aspect is crucial in a learning model, as unclear syntax may hinder teachers' understanding and lead to inconsistent implementation.

The integration of religious character values received an average score of 4.4, which falls into the valid category. This result indicates that religious character values have been appropriately embedded in each stage of the RADEC learning process, not merely as additional content but as an integral part of learning activities. This integration strengthens the affective and reflective dimensions of learning, ensuring that character education is interwoven with academic learning rather than treated as a separate component.

Similarly, the integration of critical thinking skills obtained an average score of 4.5 and was categorized as very valid. This finding demonstrates that indicators of critical thinking such as analyzing information, evaluating arguments, and drawing conclusions have been systematically incorporated into the RADEC learning stages. The emphasis on reading, discussion, explanation, and creation provides a conceptual framework that supports higher-order thinking processes.

Overall, the feasibility of the RADEC learning model achieved an average score of 4.5, indicating that the model is conceptually feasible and meets validity criteria as a learning model for elementary school

education. Based on these results, the developed RADEC learning model can be considered a valid learning model prototype that is suitable for further testing and refinement.

Theoretically, these findings are consistent with the social constructivist perspective, which emphasizes that learning is an active process of knowledge construction through interaction, reflection, and meaningful learning experiences [33], [34]. The RADEC learning model provides a structured framework that allows students to construct understanding through reading activities, deepen conceptual understanding through discussion, and strengthen learning meaning through explanation and creative tasks. The explicit integration of religious character values within this framework reinforces the affective and reflective aspects of learning, ensuring that character education is embedded within cognitive learning processes. Applying the Read, Answer, Discuss, Explain, and Create (RADEC) teaching model, as this learning approach emphasizes collaborative group work through discussion activities, thereby fostering students' learning motivation, skills development, and social abilities in working together during the discussion process [35].

Furthermore, the development of the RADEC learning model that integrates religious character and critical thinking skills is highly relevant to the Pancasila Student Profile policy. The dimensions of faith, devotion to God Almighty, and critical reasoning are conceptually reflected in the learning objectives and activities designed at each RADEC stage. Thus, this model contributes theoretically to the development of character-oriented learning models and provides a validated conceptual framework that aligns with national education policies.

Although descriptive indications related to learning activities suggest the potential of the RADEC model to support religious character and critical thinking development, these findings should not be interpreted as evidence of effectiveness. Rather, they serve as an initial indication that the model design has strong theoretical and conceptual foundations. Therefore, the results of this development research provide a solid basis for future studies to conduct practicality testing and quantitative effectiveness evaluation of the RADEC learning model [36], [37]. The RADEC model creates a learning environment that supports the development of critical thinking skills and active participation [38]. These findings are not intended as proof of the model's effectiveness, but rather as an initial indication that the model's design has potential for further development. Therefore, the results of this model development provide a strong foundation for quantitatively testing the effectiveness of the RADEC model in further research.

CONCLUSION

Based on the research results, it can be concluded that learning in elementary schools has not systematically integrated the strengthening of religious character and critical thinking skills, because it is still

oriented towards mastery of material and memorization so that the internalization of values and the development of critical thinking are not optimal. Answering this problem, this study succeeded in developing a reconstructed RADEC learning model by integrating religious character values and critical thinking indicators in each learning syntax, namely Read, Answer, Discuss, Explain, and Create, which is designed to facilitate reflective, dialogical, and contextual learning. The results of expert validation show that the RADEC model has a high level of theoretical and practical validity and is considered feasible from the aspects of learning objectives, clarity of syntax, and integration of strengthening religious character and critical thinking, while the results of the implementation test show that the model can be applied consistently by teachers in the classroom. Thus, the RADEC learning model based on religious character and critical thinking is worthy of being used as an alternative learning in elementary schools and contributes to supporting the implementation of the Pancasila Student Profile, especially in the dimensions of faith, devotion to God Almighty, and critical reasoning.

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