THE TEACHER COMPETENCY IN APPLYING CHARACTER EDUCATION VALUES (CASE STUDY OF MATHEMATICS TEACHER IN ELEMENTARY SCHOOL)

Rahmat Fajar Prakoso[1*], Dian Ratna Suryandari[2]
[1,2] PGSD Dharmacarya STAB Negeri Raden Wijaya Wonogiri
[1*]fajarahmat@radenwijaya.ac.id, [2]dian@radenwijaya.ac.id
*Corresponding author**

ABSTRACT

This study aims to examine teacher's competence in implementing character education values in elementary schools, both in terms of preparation and implementation. The focus of this study is on how character education values are integrated into mathematics learning at the elementary school level. The study employed a case study approach involving elementary school mathematics teachers in Surakarta during the 2025/2026 academic year. The research instruments included observations, questionnaires, interviews, and documentation in the form of audio recordings. The findings revealed that: (1) in terms of competence and knowledge, the elementary school mathematics teacher's had not yet possessed adequate competence in integrating character education values into mathematics learning; and (2) due to the lack of competence in understanding and applying character education values, mathematics teacher's were not adequately prepared to implement them in classroom learning.

***Keywords**: competence of math teacher, character education, elementary school*

ABSTRAK

Penelitian ini bertujuan untuk mengetahui kompetensi guru dalam menerapkan nilai pendidikan karakter di sekolah dasar, baik dari aspek persiapan maupun dari aspek pelaksanaannya. Fokus dalam penelitian ini adalah pada bagaimana cara mengintegrasikan pendidikan nilai karakter ke dalam pembelajaran matematika di sekolah dasar. Pendekatan yang digunakan dalam penelitian ini adalah studi kasus terhadap guru matematika sekolah dasar di Kota Surakarta pada tahun ajaran 2025/2026. Instrumen penelitian meliputi observasi, kuesioner, wawancara, dan dokumentasi dalam bentuk rekaman suara. Hasil penelitian menunjukkan bahwa: 1) Dari aspek kompetensi atau pengetahuan, ditemukan bahwa guru matematika di sekolah dasar tersebut belum memiliki kompetensi yang memadai dalam mengintegrasikan pendidikan nilai karakter ke dalam pembelajaran matematika. 2) Karena kurangnya kompetensi dalam pengetahuan dan penerapan nilai pendidikan karakter, maka guru matematika di sekolah belum siap dalam melaksanakannya.

***Kata Kunci**: kompetensi guru matematika, pendidikan karakter, sekolah dasar*

A. Introduction

The purpose of Indonesian education is to develop students competence and character in order to strengthen national development. However, the current implementation of education often emphasizes cognitive achievement more than character formation. This condition can be observed through various moral and social deviations occurring in society, including corruption, intolerance, violence among students, and declining ethical awareness in public life. Recent studies have highlighted that character degradation among students and society remains a serious issue in Indonesia's educational context (Suriadi, Firman, & Ahmad, 2021).

These problems indicate weaknesses in moral values and character development. Therefore, character building should be initiated from an early age and continuously reinforced through formal education. Schools play a strategic role in shaping students' morality, responsibility, discipline, and social awareness. Education is expected not only to transfer knowledge but also to develop learners' ethical behavior and integrity, which are essential for maintaining the dignity of the nation (Rahmatullah et al., 2023).

In educational practice, teachers have attempted to integrate character education into classroom learning. However, many implementations are still limited to theoretical explanations and have not yet been fully applied in authentic learning experiences. Effective character education requires teachers to understand not only the concepts and theories of character education but also pedagogical strategies and practical applications integrated into all subjects (Suyitno & Wahidin, 2022). Therefore, character education should not stand as an independent subject but should be embedded across the curriculum.

The integration of character education into every subject requires serious attention, especially in subjects considered difficult by students, such as mathematics. Mathematics is often perceived as abstract; therefore, learning should be connected to students' real-life experiences through contextual and realistic approaches. By linking mathematical concepts to daily life, teachers can simultaneously instill values such as honesty, discipline, persistence, cooperation, and respon-

sibility. Previous studies emphasized that mathematics learning should not merely focus on mastering formulas but also on developing meaningful understanding and positive character values relevant to students' lives (Widodo & Kartikasari, 2021).

The gap between mathematical concepts and their real-life application often makes elementary school students perceive mathematics as difficult and less interesting. This condition affects students' motivation and achievement in mathematics learning. Data from the Programme for International Student Assessment (PISA) 2022 showed that Indonesia's mathematics performance remains below the OECD average, indicating that students' mathematical literacy skills still need significant improvement. These findings suggest that mathematics learning should emphasize both conceptual understanding and character development in the learning process.

In this context, the learning process becomes more important than merely obtaining correct answers. Success in mathematics education should not only be measured by students' ability to memorize formulas but also by how learning activities cultivate character values such as curiosity, perseverance, responsibility, and critical thinking (Putri et al., 2023).

Character education can be effectively implemented when teachers integrate moral knowledge, moral feeling, and moral action into classroom activities. These components include students' awareness of moral values, empathy, self-control, responsibility, and the habit of practicing positive behavior in daily life. Teachers therefore need adequate competence to design and implement mathematics learning that integrates both academic achievement and character formation.

Based on the explanation above, the main issue concerns the competence of elementary school teachers in implementing character education values in mathematics learning. Teachers are expected not only to deliver mathematical knowledge but also to shape students' character through meaningful and value-oriented learning experiences.

B. Method

This study employed a qualitative case study design to investigate teachers' competencies and the implementation of character

education in mathematics learning. The case study approach was selected because it enables an in-depth exploration of educational phenomena within their real-life context, particularly focusing on the interaction between teachers, students, and classroom practices (Creswell & Poth, 2018). The study concentrated on a single classroom setting involving one mathematics teacher and fifth grade students as the primary participants. To maintain research ethics and participant confidentiality, the teacher's identity was anonymized and referred to as Informant A. Informant A is a 57 year old Javanese female teacher who teaches fifth grade at an elementary school in Surakarta. The research was conducted during the 2025/2026 academic year. Informant A was selected purposively because she is a senior teacher with approximately 30 years of teaching experience and holds a professional teaching certification issued by the Ministry of Education, Culture, Research, and Technology of Indonesia. Her extensive teaching experience and professional background were considered relevant for examining the integration of character education values into mathematics instruction.

Data were collected through questionnaires, classroom observations, video recordings, and semi-structured interviews. The use of multiple data collection techniques was intended to enhance the credibility and depth of the findings through methodological triangulation (Merriam & Tisdell, 2024).

The questionnaire consisted of open-ended questions designed to explore the teacher's competence in implementing character education within mathematics learning, as well as the teacher's pedagogical beliefs regarding mathematics instruction. Teacher competence in character education was examined through two primary dimensions: instructional planning and classroom implementation. Meanwhile, teachers' beliefs about teaching and learning mathematics refer to their subjective understanding, personal perspectives, and implicit assumptions concerning the teaching-learning process, the roles of teachers and students, students' mathematical understanding, and classroom practices related to mathematics instruction (Hill & Chin, 2022).

Classroom observations supported by video recordings were conducted to capture instructional practices, teacher-student interactions, and the integration of character education values during mathematics learning activities. In addition, semi-structured interviews were employed to further investigate the teacher's beliefs, instructional decisions, and contextual factors influencing classroom practices. This approach enabled the researcher to obtain more comprehensive insights into the relationship between teachers' beliefs and instructional implementation (Cohen, Manion, & Morrison, 2024).

The questionnaire was administered to Informant A prior to the classroom observations. The purpose of the questionnaire was to identify the teacher's understanding and competence in integrating character education into mathematics learning. The questionnaire included several open-ended questions, such as:

1. What are your views on character education in mathematics learning?
2. Have you integrated character education values into mathematics instruction? If so, how do you implement them?
3. What learning models or instructional approaches do you use to integrate character education into mathematics learning?
4. What challenges do you encounter when implementing character education in mathematics instruction?

Three mathematics learning sessions were observed and video-recorded, with each session lasting approximately 35 minutes. Informant A taught fifth-grade students on the topic of mixed arithmetic operations. The classroom observations aimed to identify instructional strategies, teacher-student interactions, and the extent to which character education values were embedded in the learning process.

Following the completion of the classroom observations, a semi-structured interview was conducted to further elaborate Informant A's responses to the questionnaire and to gain deeper understanding of her instructional beliefs and practices. The interview protocol consisted of questions similar to those included in the questionnaire and was audio-recorded using a mobile recording application. Additionally, the interview

explored the rationale behind the teacher's instructional approaches and the factors influencing her pedagogical decisions (Kim, 2021). Examples of the interview questions included:

1. How do you usually teach mathematics in the classroom?
2. Why did you introduce mathematical concepts using that particular approach?
3. How did you facilitate students' understanding of new mathematical concepts?
4. What factors motivated you to apply this instructional approach?

The questionnaire responses were analyzed using thematic analysis to identify recurring patterns, meanings, and tendencies related to the teacher's competence and beliefs regarding the implementation of character education in mathematics learning. The findings obtained from the questionnaire were subsequently elaborated and validated through semi-structured interviews to obtain a deeper and more comprehensive understanding of the participant's perspectives and instructional experiences (Braun & Clarke, 2022; Creswell & Poth, 2018).

The audio-recorded interviews were transcribed verbatim and analyzed interpretatively to describe the beliefs held by Informant A concerning the nature of mathematics, mathematics teaching, and the integration of character education values in classroom instruction. The patterns emerging from the questionnaire and interview data were categorized into several orientations of pedagogical belief, namely traditional (absolutist), predominantly traditional, predominantly constructivist, and constructivist (fallibilist). These categories were used to examine the participant's perspectives on the teaching and learning of mathematics and the extent to which student-centered approaches were reflected in instructional practices (Beswick, 2021).

Furthermore, the classroom video recordings were repeatedly reviewed and triangulated with the interview data to analyze the participant's instructional competence, pedagogical beliefs, and classroom practices during the teaching sessions. This process was conducted to confirm the consistency between the participant's stated

beliefs and her actual instructional implementation in the classroom.

All video recordings and interview data were transcribed and subsequently returned to the participant for verification through a member checking process. This procedure was intended to ensure the accuracy, credibility, and trust-worthiness of the data interpretation by allowing the participant to review and confirm the transcribed information and the researcher's interpretations (Lincoln & Guba, 2021).

C. Results and Discussion

This section discusses Informant A's beliefs by categorizing them into two main dimensions, namely beliefs regarding teacher competency and beliefs concerning the implementation of character education in mathematics learning. Furthermore, the analysis examines the interrelationship between competency and beliefs within instructional practices, as well as the potential factors influencing the formation and implementation of those beliefs in the classroom context.

Informant A's Knowledge of Character Education

Based on the analysis of responses obtained from the open-ended questionnaire and semi-structured interviews, it was found that Informant A's competence and beliefs regarding the implementation of character education in mathematics learning were still relatively limited. The collected data indicate that the participant had not yet developed a comprehensive understanding of character education as a pedagogical foundation for planning and imple-menting character-based mathe-matics instruction. This finding aligns with recent studies emphasizing that teachers' conceptual understanding of character education significantly influences the effectiveness of its implementation in classroom learning (Aeni, 2021).

Further interview findings revealed that Informant A had limited familiarity with several official policy documents and national guidelines related to character education in Indonesia. In particular, the participant had not yet fully understood three principal references concerning character education, namely: (1) *The Main Design of Character Education*

(2010), which explains the conceptual framework and functions of character education; (2) *National Policy on National Character Development 2010–2025*, which outlines strategic directions for character development through education; and (3) *Cultural and National Character Education* (2010), which contains descriptions of character values intended to be integrated into educational practices. The limited understanding of these policy frameworks indicates that the participant's implementation of character education was more practice-oriented than conceptually grounded.

The interview data further demonstrate that Informant A perceived character education primarily as a process of habituation intended to cultivate positive student behavior. According to the participant, continuous habituation activities would eventually shape students' behavioral patterns and personal character. Informant A also believed that character education could be implemented through two approaches: first, through separate habituation programs conducted at the school level; and second, through integration into classroom learning activities. This perspective is reflected in the following interview excerpts:

Researcher: "What do you know about character education in mathematics learning?"

Informant A: "Character education is a form of positive habituation that can be implemented continuously in schools."

Researcher: "Besides habituation, what else do you understand about character education?"

Informant A: "Character education can be integrated into classroom learning, but it can also be implemented separately through compulsory school habituation activities."

Researcher: "Have you implemented character education based on official character education guidelines?"

Informant A: "The implementation of character education in this school is adjusted to the curriculum, but I have not yet studied the main guidelines in detail."

Researcher: "In your opinion, has character education in Indonesia been implemented effectively?"

Informant A: "Character education has been implemented for a long time in Indonesia, but the outcomes are still not optimal. There are still students

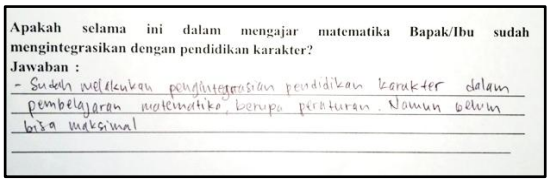
who demonstrate weak moral behavior, although environmental factors also influence this condition."

These findings indicate that Informant A tended to conceptualize character education from a behavioral and practical perspective rather than from a comprehensive pedagogical framework. Although the participant acknowledged the importance of integrating character values into mathematics learning, her understanding remained largely limited to habituation activities and general moral development. Consequently, the implementation of character education in mathematics instruction had not yet been systematically connected to curriculum objectives, instructional strategies, or learning outcomes. This condition supports previous findings that teachers often experience difficulties in translating character education policies into concrete classroom practices due to limited pedagogical understanding and inadequate professional preparation (Kurniawan, 2020).

Informant A's Competence in Implementing Character Education

The findings revealed that Informant A generally prepared instructional activities by aligning lesson implementation with the mathematical materials being taught. Instructional preparation included the development of lesson plans containing learning objectives, teaching procedures, and classroom activities to be conducted during instruction. However, the integration of character education values into mathematics learning was still carried out implicitly and had not yet been systematically designed within the instructional framework. This finding indicates that character education implementation remained procedural rather than pedagogically integrated into mathematics instruction (Aeni, 2021).

Figure 1. Informant A's Statement about how to implement character education


Apakah selama ini dalam mengajar matematika Bapak/Ibu sudah mengintegrasikan dengan pendidikan karakter?
Jawaban :
- Sudah melakukan pengintegrasian pendidikan karakter dalam pembelajaran matematika, berupa peraturan. Namun belum bisa maksimal

Based on the questionnaire responses, Informant A stated that character education values had been integrated into mathematics learning, particularly through activities related to arithmetic operations and classroom discipline. The participant emphasized that character education was mainly

implemented through habituation practices embedded in classroom routines. Habituation activities are widely recognized as one of the dominant approaches used by elementary school teachers in strengthening students' moral development and social behavior (Rahmatullah et al., 2023).

Furthermore, the interview findings demonstrated several forms of character education implementation in mathematics learning. First, before the mathematics lesson began, students were conditioned to maintain order and pay attention to the teacher's explanations. Students were subsequently assigned exercises individually and were expected to complete them independently and honestly. Those who experienced difficulties were guided directly by the teacher to improve their understanding and performance. Through this process, the teacher attempted to cultivate discipline, responsibility, honesty, and persistence among students. Previous studies have emphasized that classroom management and instructional interaction significantly influence students' character formation during mathematics learning (Putri et al., 2023).

Second, Informant A emphasized the importance of developing discipline and independence through daily classroom routines. Students were trained to complete arithmetic exercises in an orderly manner, follow classroom rules, and demonstrate responsibility for their work. Such habituation activities were continuously reinforced before and after classroom instruction. This approach reflects the behavioral orientation of character education implementation commonly found in elementary education contexts (Kurniawan, 2020).

Third, prior to the mathematics learning activities, the teacher provided moral guidance emphasizing values such as honesty, fairness, self-confidence, perseverance, and discipline. Moral reinforcement through verbal advice remains one of the most frequently used approaches in classroom based character education implementation (Suriadi et al., 2021).

Fourth, learning activities were preceded by collective prayer led alternately by students to encourage courage, responsibility, and self-confidence. Students were also encouraged to resolve interpersonal conflicts peacefully through recon-

ciliation practices. Such activities indicate that character education was not only integrated into academic learning but also implemented through social interaction and classroom culture (Prasetyo & Anwar, 2022).

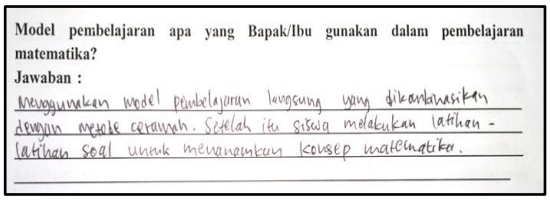
Although character education values had been integrated into mathematics instruction, the implementation remained predominantly conventional and teacher-centered. Character education was primarily delivered through verbal instruction, classroom rules, and routine habituation rather than through innovative or student-centered learning strategies. Consequently, the implementation had not yet been systematically connected to instructional objectives, mathematical reasoning, or problem-solving activities. This condition potentially limits the effectiveness of character education in promoting meaningful behavioral transformation among students (Suyitno & Wahidin, 2022).

Character Education Learning Model in Mathematics

The findings further indicated that Informant A predominantly employed direct instruction methods, particularly lecturing and repetitive exercises, in mathematics learning. According to the participant, direct instruction was considered more practical due to the density of mathematical content and limited instructional time. However, this instructional approach tended to position students as passive recipients of information and provided limited opportunities for collaborative learning and critical thinking development. Traditional teacher-centered learning models are often associated with lower levels of student engagement and creativity in mathematics learning (Widodo & Kartikasari, 2021).

Recent educational studies have emphasized that mathematics learning should adopt contextual, inquiry-based, and student-centered approaches to simultaneously improve conceptual understanding and character development (Nurhayati et al., 2023). Scientific and constructivist learning models are considered more effective in fostering critical thinking, problem-solving abilities, collaboration, and responsibility among elementary school students (Hidayat & Syahidin, 2022).

Figure 2. Informant A's statement about the learning model in mathematics

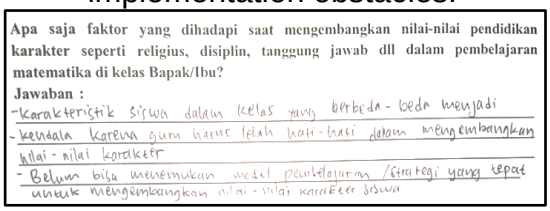

Model pembelajaran apa yang Bapak/Ibu gunakan dalam pembelajaran matematika?
Jawaban :
menggunakan model pembelajaran langsung yang dikombinasikan dengan metode ceramah. Setelah itu siswa melakukan latihan - latihan soal untuk menemukan konsep matematika.

During the interview, Informant A acknowledged that several students still experienced difficulties understanding mathematical operations despite repeated explanations and exercises. Nevertheless, the participant continued to rely on direct instruction because it was perceived as more efficient for delivering dense mathematical material. These findings suggest that the teacher's instructional practices were still strongly influenced by traditional pedagogical beliefs emphasizing knowledge transmission rather than active student participation (Beswick, 2021).

Obstacles in the Implementation of Character Education

The study also identified several obstacles encountered by Informant A in implementing character education within mathematics learning.

Figure 3. Informant A's statement about the character education implementation obstacles.


Apa saja faktor yang dihadapi saat mengembangkan nilai-nilai pendidikan karakter seperti religius, disiplin, tanggung jawab dll dalam pembelajaran matematika di kelas Bapak/Ibu?
Jawaban :
- karakteristik siswa dalam kelas yang berbeda - beda menjadi kendala karena guru harus lebih hati - hati dalam mengembangkan nilai - nilai karakter
- Belum bisa menemukan model pembelajaran / strategi yang tepat untuk mengembangkan nilai - nilai karakter siswa

First, the participant highlighted the influence of the surrounding environment, particularly the lack of continuity between character education practices at school and students' behavior at home. According to Informant A, many parents were unable to provide sufficient supervision and reinforcement of positive habits due to occupational responsibilities. Family involvement is widely acknowledged as a crucial factor in supporting the success of school-based character education programs (Rahman, 2021).

Second, technological developments and media exposure were considered significant challenges in students' character development. Informant A explained that students were highly influenced by digital technology, social media, and television programs that often reflected cultural values inconsistent with local educational norms. The rapid expansion of digital media has increasingly influenced students'

attitudes, behavior, and social interactions, particularly among elementary school children (Fitriani, 2022).

Third, the participant reported that excessive administrative responsibilities reduced teachers' opportunities to focus on students' individual character development. Administrative workloads limited the teacher's ability to conduct intensive mentoring and monitor students' behavioral progress. Previous studies have shown that administrative burden remains one of the major challenges affecting teachers' instructional effectiveness and professional performance (Sari & Nugroho, 2023).

Fourth, Informant A stated that limited professional development programs, workshops, and training related to character education created difficulties in selecting appropriate instructional strategies and integrating relevant character values into mathematics learning. Insufficient professional preparation often results in teachers' limited ability to translate character education policies into effective classroom practices (Aulia, 2021).

These findings indicate that the successful implementation of character education requires collaboration among teachers, school leaders, parents, and the broader community. Character formation cannot be effectively achieved solely through classroom instruction but requires continuous reinforcement across educational and social environments (Rahmatullah et al., 2023). Furthermore, teachers require continuous professional development to strengthen their pedagogical competence in designing mathematics learning that integrates both academic achievement and character formation (Kusumaningrum, 2022).

E. Conclusion

This study demonstrates that elementary school teachers' competence in implementing character education within mathematics learning remains relatively limited, particularly in terms of pedagogical understanding, instructional integration, and classroom implementation. The findings indicate that Informant A had not yet developed a comprehensive understanding of character education concepts and policies, especially regarding the national guidelines and frameworks related to character education implementation in

Indonesia. This condition suggests that teachers' conceptual and professional readiness in integrating character education into mathematics instruction is still insufficient and requires further improvement through systematic professional development programs (Wuryandani et al., 2021).

The findings further revealed that the implementation of character education in mathematics learning had been carried out through habituation activities, moral reinforcement, and classroom discipline. However, the instructional practices remained predominantly conventional and teacher-centered. Character values were mainly introduced through verbal instruction and routine classroom activities rather than through meaningful, contextual, and student-centered learning experiences. Such instructional patterns potentially limit students' opportunities to develop higher-order thinking skills, reflective attitudes, and authentic moral behavior within the mathematics learning process (Siregar, 2022).

In addition, Informant A predominantly employed direct instruction methods due to time limitations and dense mathematical content. Although this approach was perceived as efficient for delivering instructional materials, it provided limited opportunities for students to actively construct knowledge, engage in collaborative learning, and develop critical reasoning abilities. Contemporary mathematics education research emphasizes that innovative learning models based on scientific and constructivist approaches are more effective in promoting students' conceptual understanding, problem-solving skills, and character development simultaneously (Nugraheni & Marlina, 2023). This finding is in line with previous studies which stated that mathematics learning at the elementary school level still tends to rely on conventional teaching approaches and therefore requires more contextual and student-centered learning models based on scientific approaches in order to improve students' engagement and learning outcomes (Prakoso et al., 2018).

Furthermore, mathematics learning should not only focus on procedural mastery and memorization but also facilitate students' Higher Order Thinking Skills (HOTS), including critical thinking, problem solving, reasoning, and analytical abilities. HOTS-based mathematics

learning encourages students to become more active and reflective learners through meaningful learning experiences connected to real-life situations. Such learning approaches are also considered capable of strengthening students' confidence, responsibility, creativity, and independence during the learning process (Surya et al., 2018).

The study also identified several obstacles in implementing character education, including environmental influences, lack of parental support, technological exposure, teachers' administrative workload, and limited professional training related to character based instruction. These findings indicate that character education cannot be effectively implemented solely through class-room instruction, but instead requires collaboration among schools, families, communities, and policymakers to establish supportive educational environments (Handayani, 2021).

The findings further suggest that many elementary school teachers are not yet fully prepared to implement character education comprehensively in mathematics learning. Teachers still tend to emphasize cognitive achievement while paying less attention to affective and psychomotor dimensions of learning. Consequently, character education practices have not yet optimally facilitated the development of students' moral awareness, emotional engagement, and behaveoral transformation (Fauziyah, 2023).

Therefore, sustainable improvements in the Indonesian education system are urgently needed, particularly in strengthening teachers' pedagogical competence in implementing character education within mathematics instruction. One possible effort is to intensify teachers' understanding of character education concepts, policies, and instructional strategies through workshops, professional training, collaborative learning communities, and curriculum development programs. In addition, mathematics learning should gradually shift toward contextual, scientific, and HOTS-oriented approaches that integrate academic achievement with character formation.

In conclusion, this study confirms that the successful integration of character education into elementary mathematics learning requires not only teachers' pedagogical competence but also the transformation of instructional paradigms from conven-

tional teaching toward meaningful, student-centered, scientific, and HOTS-oriented learning practices. Such an approach is expected to support the holistic development of students' cognitive, affective, and psychomotor compe-tencies, while simultaneously strengthening charac-ter values needed in both academic and social life contexts.

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