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ANALYSIS OF 6C SKILLS *(CRITICAL THINKING, CREATIVITY, COLLABORATION, COMMUNICATION, COMPUTATIONAL THINKING, COMPASSION)* IN THE IMPLEMENTATION OF 21ST CENTURY LEARNING IN ISLAMIC RELIGIOUS EDUCATION SUBJECTS AT SMK UNGGUL NEGERI 2 BANYUASIN III

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Abstract
This study aims to analyze the implementation of 6C skills Critical Thinking, Creativity, Collaboration, Communication, Computational Thinking, and Compassion in Islamic Religious Education (PAI) as part of 21st-century learning at SMK Unggul Negeri 2 Banyuasin III. The research employed a qualitative approach with a case study design. Data were collected through interviews, observations, and document analysis involving PAI teachers, the principal, and students. The findings reveal that the integration of 6C skills is evident, particularly in aspects of collaboration and communication through group discussions and student presentations. However, the application of computational thinking and creativity remains limited due to challenges such as uneven technology integration and reliance on conventional teaching methods. Supporting factors include adequate technological infrastructure and a school culture that upholds religious values, while major obstacles involve the lack of teacher training in innovative learning strategies. The study concludes that optimizing 6C competencies in PAI instruction requires enhancing teachers' pedagogical skills, ensuring equitable access to digital tools, and strengthening school-industry partnerships to prepare students who are adaptive, ethical, and globally competitive.
Keywords: 6C skills, 21st-century learning, Islamic Religious Education

Abstrak
Penelitian ini bertujuan untuk menganalisis implementasi kemampuan 6C (Critical Thinking, Creativity, Collaboration, Communication, Computational Thinking, dan Compassion) dalam pembelajaran Pendidikan Agama Islam (PAI) sebagai bagian dari penerapan pembelajaran abad ke-21 di SMK Unggul Negeri 2 Banyuasin III. Metode penelitian yang digunakan adalah pendekatan kualitatif dengan desain studi kasus. Teknik pengumpulan data mencakup wawancara, observasi, dan studi dokumentasi terhadap guru PAI, kepala sekolah, dan siswa. Hasil penelitian menunjukkan bahwa implementasi kemampuan 6C telah terlihat dalam beberapa aspek, terutama pada kolaborasi dan komunikasi melalui diskusi kelompok dan presentasi. Namun, penerapan computational thinking dan kreativitas masih menghadapi hambatan, seperti

keterbatasan integrasi teknologi dan pendekatan pembelajaran yang masih konvensional. Faktor pendukung utama meliputi fasilitas teknologi yang memadai dan dukungan budaya sekolah terhadap karakter religius, sementara hambatannya meliputi kurangnya pelatihan guru dalam pembelajaran inovatif. Penelitian ini menyimpulkan bahwa optimalisasi kemampuan 6C dalam pembelajaran PAI memerlukan penguatan kompetensi pedagogik guru, integrasi teknologi secara merata, dan sinergi antara sekolah dan dunia industri untuk mencetak lulusan yang adaptif, religius, dan siap menghadapi tantangan global.
***Kata kunci**: Kemampuan 6C, Pembelajaran abad ke-21, Pendidikan Agama Islam*

INTRODUCTION

The rapid development of information technology in the 21st century has affected almost all aspects of life, including education. In this context, the world of education is faced with new demands: it is not enough to just instill the cognitive aspect, but also to equip students with various relevant competencies to face global challenges. These skills are formulated within the framework of the 6Cs, namely *Critical Thinking, Creativity, Collaboration, Communication, Computational Thinking, and Compassion*, which are an integral part of 21st century education (Zakaria et al., 2020; Nurhayati et al., 2023).

Education that only focuses on academic ability is now seen as inadequate. Students need to be equipped with critical thinking skills to analyze information, creativity to come up with new solutions, collaboration to work together effectively, communication to convey ideas clearly, computational thinking to solve problems systematically, and social care in the form of compassion (Papagiannis & Pallaris, 2024; Afifah et al., 2022). The integration of these six skills is not only relevant in the field of science and technology, but also in religious education such as Islamic Religious Education (PAI), which has a central role in shaping the character of students (Arif & Aziz, 2023; Husaini et al., 2023).

Conventional PAI learning, which generally focuses on lectures and memorization, is considered less able to develop students' potential comprehensively (Kurniawati & Askar, 2024). The challenge faced by Islamic education in the digital era is not only how to convey teachings correctly, but also how to equip students with life skills that are in accordance with Islamic values. In this case, 21st-century learning approaches are very relevant to be applied in Islamic education (Sa'idi, 2022; Suhid et al., 2021).

In the context of Vocational High Schools (SMK), the urgency of developing 6C skills has become stronger considering that this institution aims to produce graduates who are ready to work and have a strong character. SMK Unggul Negeri 2 Banyuasin III is one of the schools that has great potential in integrating 6C skills into PAI learning. The school has adequate supporting facilities, such as computer laboratories and internet access, as well as collaboration programs with the industrial world. However, in practice, the implementation of 6C skills has not been fully evenly distributed and still faces a number of obstacles, such as limited teacher training and resistance to changes in learning models (Tisa, 2024; Hidayati et al., 2021).

The results of initial observations showed that students interacted more in collaboration and communication aspects, such as group discussions and presentations on religious issues. However, the aspects *of computational thinking* and creativity have not been optimally worked on. PAI learning still tends to be linear and does not accommodate technology-based or project-based approaches (Milara & Orduña, 2024). In fact, this kind of approach can help students understand Islamic teachings in a more contextual and applicative way. For example, by creating digital campaigns about Islamic values or social projects based on Islamic teachings, students will be more motivated to internalize religious values while developing 21st century skills (Ewing & Saunders, 2016; Almubaroq, 2023).

In this context, strengthening the 6C ability in PAI learning in vocational schools can be studied through a learning approach based on TPACK (*Technological Pedagogical Content Knowledge*) and constructivism theory. TPACK emphasizes the synergy between mastery of content, pedagogy, and technology by teachers to create meaningful and adaptive learning to the times (Kurniawati & Askar, 2024; Surya et al., 2023). Meanwhile, constructivist theory encourages students to build knowledge through experience and social interaction, which is very suitable to be applied in Islamic-based collaborative projects (Bandura in Hidayati et al., 2021).

In the Vocational High School (SMK) environment, the ability of 6C is increasingly urgent to be implemented because vocational school graduates are required to be ready to enter the world of work. SMK Unggul Negeri 2 Banyuasin III is one of the schools that has the potential to integrate 21st-century learning into religious education. However, the implementation of 6C capabilities in PAI learning still faces various challenges, such as limited teacher training and the use of technology that has not been maximized (Husaini et al., 2023)

Thus, there needs to be an in-depth study of how the 6C ability is implemented in PAI learning in vocational schools, what are the supporting and inhibiting factors are, and how effective it is in shaping the character and competence of students. This research is important to formulate a learning strategy that not only instills religious values but also prepares students to become a competent, religious, and ready generation to face the global challenges of the 21st century (Amzaleg & Masry-Herzallah, 2022).

This study aims to analyze teachers' strategies in integrating 6C skills in PAI learning, identify their supporting and inhibiting factors, and evaluate students' responses to 21st-century skill-based learning. With the hope, the results of this research can be a foothold in the development of a more adaptive curriculum and teacher training, as well as a model for the implementation of 6C skills in PAI learning in vocational schools and other schools in Indonesia.

METHOD

This study uses a qualitative approach with a case study design. This approach was chosen because it is able to describe in depth how 21st century skills, especially the 6Cs (*Critical*

Thinking, Creativity, Collaboration, Communication, Computational Thinking, and *Compassion*), are implemented in the learning of Islamic Religious Education (PAI). Case studies allow researchers to explore phenomena in real contexts, while also understanding the dynamics of learning across the board in a vocational school setting. (Creswell, 2014; Miles, Huberman, & Saldaña, 2014).

The research was carried out at SMK Unggul Negeri 2 Banyuasin III, South Sumatra, in the even semester of the 2024/2025 school year, to be precise from February to April 2025. This school was chosen because it has the characteristics of being a superior vocational institution with adequate technology-based learning facilities and a school culture that supports the formation of religious character. In addition, the school is also developing 21st-century learning practices, making it a relevant location for this research.

The informants in this study were selected purposively and consisted of school principals, Islamic Religious Education teachers, and grade XI students. The principal plays the role of policy maker, teachers as learning implementers, and students as subjects who directly experience the 6C-based learning process. Data collection techniques were carried out through in-depth interviews, participatory observations, and documentation studies. Interviews were used to explore the understanding and experiences of the informants, observations were made to see firsthand the implementation in the classroom, and documentation was used to analyze the learning plan and student work results.

The data is analyzed qualitatively with the stages of data reduction, data presentation, and a conclusion drawn. Data reduction is carried out by sorting out information that is relevant to the focus of the research. The reduced data is then presented in the form of a descriptive narrative to facilitate conclusions being drawn. The researcher also applied source triangulation and techniques to improve the validity of the findings by comparing the results of interviews, observations, and document studies. Through this analysis, the research is expected to provide a complete picture of the strategies, challenges, and effectiveness of 21st-century skills-based PAI learning.

RESULTS AND DISCUSSION

1. Integration of 6C Abilities in PAI Learning Planning by Teachers

The PAI learning planning by teachers at SMK Unggul Negeri 2 Banyuasin III has shown an integrative effort in adopting 21st-century skill values, especially the 6C. Teachers prepare learning implementation plans (RPP) by associating basic PAI competencies with activities that encourage critical thinking skills, such as analyzing the meaning of verses and hadith in the context of students' current lives. For example, in the material on morality towards others, students are invited to analyze social phenomena that occur in the surrounding environment through the approach of naqli and aqli postulates. This shows that critical thinking skills are not only taught theoretically, but are trained in learning practice.

Creativity skills are developed through project assignment methods, such as making digital da'wah posters or social campaigns with the theme of Islamic values. Teachers

also encourage students to use a variety of simple design applications to express their ideas. In terms of collaboration, teachers design group tasks that require intensive cooperation, including in making presentations or religious case studies. This activity also trains student communication, both oral and written, through interaction between students and between students and teachers.

The integration of *computational thinking*, although still limited, is beginning to be seen through the use of simple technologies in learning evaluation such as *Google Forms, Canva*, and *YouTube* as learning media. However, not all teachers consistently design learning activities that encourage systematic problem-solving using technology. The ability to *compassion* is pursued through reflection on values and empathy in learning. Teachers provide a space for students to share experiences, discuss social issues, and reflect on Islamic values in daily life, which encourages students' social sensitivity.

2. Supporting and Inhibiting Factors for the Implementation of 6C Ability

Several key supporting factors have been successfully identified in the implementation of 6C-based learning. First, structural support from schools is very large, including the provision of facilities such as projectors, internet networks, and computer laboratories that support technology-based learning. The principal also actively encourages teachers to participate in innovative learning training and workshops, as well as providing experimental space in the learning model.

In addition, a conducive learning atmosphere and religious school culture are important capital in instilling the values of compassion, collaboration, and communication. Teachers in the school environment have a collaborative spirit and are open to new approaches. Other supporting factors are the availability of digital-based learning media and the active involvement of students in religious project-based activities.

However, this implementation is not free from obstacles. One of the main obstacles is the limited competence of teachers in designing learning that integrates technology and higher-level thinking skills. Some teachers still apply a conventional approach that emphasizes more on lectures and memorization. The high administrative burden also causes teachers to have difficulty in designing creative and project-based learning activities. Another barrier stems from the variation in students' abilities, especially in digital literacy and group work readiness, which has an impact on the inequality of 6C skill achievement among students.

3. Students' 6C Abilities in the Implementation of 21st Century Learning in PAI Subjects

In general, the results of observations and interviews show that students' 6C abilities are starting to develop, although with considerable variation. In the critical *thinking aspect*, students show the ability to relate religious teachings to actual social contexts, such as in analyzing the role of Muslim youth in the digital era or moral challenges in the school

environment. However, this critical thinking ability still needs to be directed so that students are able to formulate arguments with a more logical and in-depth structure.

In the *aspect of creativity,* students show high enthusiasm when given freedom of expression, such as in making da'wah videos, Islamic poster designs, or social projects with the theme "Islam Rahmatan lil 'Alamin." Students' creativity is seen in the selection of themes, forms of visualization, and communication approaches that are appropriate to the digital generation. *Collaboration* and *communication* are quite dominant aspects, reflected in the success of students in group work, class discussions, and intergroup presentations that are carried out in a structured manner and mutual respect for differences of opinion.

Meanwhile, students' *computational thinking* skills are still relatively low. Most students are not used to systematically identifying problems or using digital tools as a means of solving learning problems. They tend to be only users of technology, not managers or creators of information. The students' *ability to empathize* develops positively, as can be seen from their involvement in religious and social activities, such as fundraising, visits to orphanages, or making personal reflections on the meaning of help-helping and Islamic ukhuwah. Overall, students at SMK Unggul Negeri 2 Banyuasin III have shown the development of 6C skills in PAI learning. However, this development still needs to be improved through a more systematic approach, continuous teacher training, and further integration of Islamic values and technology in the learning process.

The results of this study show that PAI teachers at SMK Unggul Negeri 2 Banyuasin III have begun to integrate elements of 21st century skills, namely 6C skills, in the planning and implementation of learning. Although it is not completely evenly distributed, this step is a positive indication that teachers have awareness of the importance of equipping students with competencies that are relevant to the challenges of the times. 6C-based learning is in line with a new paradigm of education that places students as active subjects in building knowledge through exploration, collaboration, and reflection on values.

The integration of *critical thinking* and *creativity skills* can be seen through the activity of analyzing social issues with a religious postulate approach as well as creative projects such as Islamic value campaigns based on digital media. This supports the idea that PAI learning can be contextualized so that students are able to develop an understanding of Islam that is not dogmatic, but applicable and solutive. In this case, the teacher plays an important role as a learning designer who not only conveys the material, but also activates the intellectual and emotional potential of the students.

The collaboration and communication developed through discussions and group work have trained students to work together productively and convey ideas effectively. In 21st century learning, the ability to work in teams and communicate across cultures is a core competency. These findings reinforce the view that social interaction in the classroom, when properly facilitated, not only builds character, but also trains students' interpersonal skills that are needed in the world of work and society at large.

However, *computational thinking* skills have not been optimally worked on. Students still use technology as a passive aid, not as part of a thinking or problem-solving strategy. This shows the need to redefine the use of technology in learning, from just a medium to a vehicle for systematic thinking. The implementation of *computational thinking* requires a *problem-based learning* or *project-based learning* design that allows students to solve religious problems through logical and technological approaches. Without this approach, digital utilization will only become a formality without a profound impact on students' thinking skills.

The value *of compassion* as a spiritual and social dimension in Islamic education has also been introduced, but it has not been fully internalized in students' daily attitudes and behaviors. Even though students are involved in social activities and have an understanding of the value of empathy, the habituation *of compassion* values in concrete actions still needs reinforcement. This indicates the need for a hands-on experiential learning approach, such as involvement in service *learning* projects that link Islamic values with social concerns.

Supporting factors such as the availability of technological infrastructure, the support of the principal, and the religious culture of the school are very helpful for teachers in implementing 6C-based learning. A school environment that supports innovation and religious values creates an atmosphere conducive to character and skill learning. However, several obstacles also emerged, such as the limitation of teacher training in technology-based learning, administrative burden, and the low digital literacy of some students. These obstacles demonstrate the importance of continuously improving teachers' pedagogic and digital competencies, as well as the need for more flexible school policies and supporting learning innovation.

Furthermore, the results of this study indicate that strengthening the 6C ability in PAI learning cannot be done in isolation from the broader education ecosystem. Integration between curriculum approaches, teacher capacity, technology, and active involvement of students and the community is needed. The development of 21st-century value-based learning and skills in the context of Islam is the answer to the need to produce a generation that is not only academically intelligent, but also religious, humanist, and adaptive to the changing times.

Thus, PAI learning has a great opportunity to become an integrative vehicle between character development and 21st century competencies. Teachers must continue to develop themselves, not only in mastering teaching materials, but also in designing value, skill, and technology-based learning. Schools as institutions must also provide collaborative spaces between teachers and encourage the development of a contextual and transformative curriculum. This research is a reminder that the transformation of Islamic education is not enough at the conceptual level, but must be concretely realized in dynamic and relevant learning practices.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the implementation of 6C skills in Islamic Religious Education (PAI) learning at SMK Unggul Negeri 2 Banyuasin III has been carried out gradually, although it is not optimal in all aspects. Teachers have integrated *critical thinking, creativity, collaboration, communication, computational thinking,* and *compassion* in learning planning, especially through discussion activities, digital projects, and group assignments. However, *computational thinking* and the use of technology still need to be improved so that it can become a means of solving problems systematically.

The main supporting factors for the implementation of the 6Cs include school policy support, adequate technological facilities, and a strong religious school culture. Meanwhile, the obstacles faced include limited teacher training, administrative burden, and low digital literacy for some students. However, students' abilities in the aspects of collaboration, communication, and empathy have developed well, while critical and creative thinking skills are beginning to be seen. Computational *thinking skills* are still a challenge in itself that requires a more structured approach and intervention.

For this reason, strengthening the 6C's ability requires strategic efforts that involve improving teachers' pedagogic competence, integrating technology in value-based learning, and synergy with the industrial world to prepare students who are not only religious but also adaptive and competent to face the global challenges of the 21st century.

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