

Integration of Computer Science Technology in Learning at Politeknik Media Kreatif Based on Islamic Values

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ABSTRACT

The integration of technology in education has become an urgent necessity in the digital era, particularly in vocational higher education institutions such as Politeknik Media Kreatif. This article aims to explore the implementation of computer science technology in learning by emphasizing Islamic values as ethical and moral guidelines. A qualitative-descriptive approach was employed, collecting data through interviews, observations, and document analysis of educational programs at Politeknik Media Kreatif. The findings indicate that integrating computer science technology not only enhances the effectiveness and efficiency of learning but also serves as a medium for instilling Islamic values such as honesty, responsibility, and collaboration. By utilizing digital learning media rooted in Islamic principles, students acquire not only technical skills but also strengthened character aligned with religious teachings. This study recommends developing a curriculum that combines technology, creativity, and Islamic values to produce graduates who are professionally competent and morally upright.

Keywords: Technology Integration, Computer Science, Islamic Education, Politeknik Media Kreatif, Islamic Values.

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1. INTRODUCTION

In the digital era, the rapid advancement of computer science and information technology has transformed educational practices across various levels and disciplines. In vocational institutions such as Politeknik Media Kreatif, which emphasizes applied skills and creativity, integrating computer science into learning is essential to produce graduates capable of thriving in the dynamic creative industry. However, a significant challenge arises in ensuring that this technological integration aligns with moral and ethical values, especially within a campus environment where diverse cultural and religious perspectives coexist. As Politeknik Media Kreatif operates in Indonesia, a country with a Muslim-majority population, incorporating Islamic values into education is not only relevant but also necessary to shape character and uphold integrity in professional and personal contexts.

Despite numerous studies highlighting the benefits of digital learning and the effectiveness of technology in enhancing student engagement, a gap remains in addressing how these tools can be harmonized with the principles of Islamic education. Prior research predominantly focuses on the technical and pedagogical aspects of technology use in education, such as improving student outcomes, streamlining administrative processes, and fostering collaboration. For instance, studies have extensively explored the effectiveness of e-learning platforms and multimedia tools in vocational settings but have overlooked the role of moral and spiritual development within these frameworks (Pratiwi, 2020). Furthermore, limited research has been conducted on how Islamic values, such as honesty, responsibility, and teamwork, can be embedded into technical education programs (Widyaningsih, Zamroni, Z., & Zuchdi, 2014).

The lack of integration between technology and Islamic education has led to a gap in producing well-rounded graduates who are both technically proficient and morally grounded. Observations at Politeknik Media Kreatif reveal a growing need to develop learning strategies that not only enhance technical competencies but also instill ethical principles consistent with Islamic teachings. For example, while computer science courses at the institution equip students with essential programming and design skills, little emphasis is placed on ethical considerations in technology use or the application of Islamic values in their creative outputs.

This research addresses these gaps by exploring how computer science technology can be integrated into learning processes at Politeknik Media Kreatif while embedding Islamic values to achieve a holistic educational approach. By examining current practices, identifying challenges, and proposing innovative solutions, this study aims to contribute to both theoretical frameworks and practical applications for vocational education in Indonesia.

2. METHODS

This study adopts a qualitative descriptive approach to explore how the integration of computer science technology in learning at Politeknik Media Kreatif can be implemented while considering Islamic values. A qualitative approach is chosen as it aims to gain in-depth understanding of current educational practices and how Islamic values can be applied in the context of technology-based education (Nurhayati, et. all., 2024). Below are the stages of the research process:

a. Selection of Research Location and Subjects

This research was conducted at Politeknik Media Kreatif, a vocational institution in Indonesia with a focus on teaching computer science and creative media. The subjects of the study consisted of lecturers teaching computer science and creative

media courses, students enrolled in the programs, and administrative staff involved in curriculum development and the implementation of technology in education. These subjects were selected due to their direct involvement in technology-based education and the integration of Islamic values.

b. Data Collection

Data were collected through the following methods:

- 1) In-depth Interviews: Interviews were conducted with lecturers teaching computer science and media courses, students participating in the programs, and administrative staff involved in curriculum planning and development. The interviews aimed to explore their perceptions, experiences, and challenges in integrating technology with Islamic values in education.
- 2) Observation: The researcher conducted observations during the learning process, both in face-to-face classes and through technology-based learning (such as e-learning platforms). The goal was to observe the extent to which technology was utilized in teaching and how Islamic values were incorporated into the daily academic activities.
- 3) Document Study: This research also examined relevant documents such as curriculum guides, course syllabi, teaching materials, and policies related to the use of technology in teaching at Politeknik Media Kreatif. The document study aimed to systematically understand how the integration of technology and Islamic values is planned and implemented.

c. Data Analysis

Data collected from interviews, observations, and document studies were analyzed using thematic analysis. In this stage, the researcher identified key themes emerging from the data, such as the application of technology in learning, challenges in integrating Islamic values, and examples of best practices in education that combine both. The analysis also involved categorizing the data based on relevant themes to provide a clear picture of the integration process of technology and Islamic values.

d. Data Validation

To ensure the validity of the data, this study employed source triangulation and methodological triangulation. Source triangulation involved comparing the information gathered from different subjects (lecturers, students, administrators) to obtain a more comprehensive perspective. Methodological triangulation was carried out by combining interviews, observations, and document studies, which strengthened the findings and ensured a more holistic understanding.

e. Development of the Learning Model

Based on the results of the data analysis, the study developed a learning model that integrates computer science technology with Islamic values. This model aims to provide practical guidelines for Politeknik Media Kreatif and similar institutions in designing a holistic curriculum and learning strategies that not only emphasize technical skills but also reinforce character development and ethical values.

f. Conclusions and Recommendations

Upon completing the analysis, the researcher drew conclusions summarizing the key findings related to the integration of technology and Islamic values in learning at Politeknik Media Kreatif. The researcher also provided recommendations for future curriculum development and learning strategies, both at Politeknik Media Kreatif and at other vocational education institutions.

This study is expected to contribute to the development of higher education in Indonesia, particularly in integrating technology with the principles of Islamic education.

3. FINDINGS AND DISCUSSION

Through the data collection process, which included interviews, observations, and document studies, several key findings emerged regarding the integration of computer science technology in learning at Politeknik Media Kreatif, alongside the application of Islamic values.

a. Integration of Technology in Learning

The use of technology in the teaching process at Politeknik Media Kreatif was widely embraced. Lecturers employed a variety of digital tools such as e-learning platforms, online assignments, and multimedia presentations to facilitate learning in computer science and media-related courses. Technology was seen as an effective means to enhance student engagement, provide real-time feedback, and foster collaboration. However, the integration was mostly limited to the technical aspects of the courses, with little focus on embedding ethical or moral values within these technologies.

b. Challenges in Integrating Islamic Values

While the institution had a clear commitment to fostering ethical development among students, the integration of Islamic values in the curriculum was not fully realized. Interviews with lecturers and administrators revealed that there were no formal or systematic efforts to embed Islamic values directly into the use of technology or the teaching of computer science. In some cases, lecturers individually incorporated

values such as honesty, responsibility, and integrity into their lectures, but this was not consistent across all courses. There was a noticeable gap between the technological aspects of the curriculum and the ethical considerations that could be infused into the learning process.

c. Student Perception of Values in Technology-Based Learning

Students generally recognized the importance of ethical behavior and integrity in their professional lives, especially in fields like computer science and media. However, many students reported that while they were exposed to these values in other areas of their education, such as Islamic studies or character education courses, these values were rarely emphasized in their technical courses. This indicates that while students understood the importance of Islamic ethics, they often did not connect these values to their use of technology and technical learning.

d. Examples of Best Practices

Despite the challenges, there were instances of good practices where certain lecturers successfully integrated ethical discussions related to technology use. For instance, some instructors incorporated case studies on data privacy, digital ethics, and the role of technology in society, using Islamic perspectives on honesty and responsibility to guide discussions. These examples, although limited, showed that the integration of Islamic values in technology education was both feasible and valuable for shaping students' character in addition to their technical skills.

The findings of this study highlight both the potential and the challenges of integrating computer science technology with Islamic values at Politeknik Media Kreatif.

a. Potential of Technology in Education

The widespread use of technology in learning provides significant opportunities for enhancing the educational experience. In the context of Politeknik Media Kreatif, technology was effectively used to improve access to information, promote collaborative learning, and provide students with up-to-date resources. However, these advancements in teaching methods were primarily focused on the technical competencies needed for the creative industries, with limited attention given to the moral implications of technology use. This reflects a broader trend in vocational education, where technical skills often take precedence over the development of ethical reasoning.

Several other studies support the findings that technology has great potential to enhance the learning experience, particularly in vocational and technical education. Below are relevant research results that reinforce the discussion about the potential of technology in education at Politeknik Media Kreatif:

- 1) Garrison and Anderson (2003), which examines the application of technology in education, revealed that technology enables more flexible learning by providing students with broader access to learning materials and resources (Anderson, & Rivera Vargas, 2020). Tools like e-learning platforms and cloud-based learning systems can overcome geographical and time barriers, which is particularly important in vocational education, as seen at Politeknik Media Kreatif. With technology, students can access learning materials anytime and anywhere, which strengthens their engagement in more interactive and responsive learning experiences.
- 2) Siemens (2005) on the theory of connectivism emphasizes that technology accelerates collaborative learning and the development of problem-solving skills, which are crucial in fields like computer science and media (Saritaş, 2015). Through tools like online learning platforms, students can collaborate on group projects, share ideas, and access a wide array of information in real-time. This enables them to develop skills that are relevant to the creative and tech industries. At Politeknik Media Kreatif, the use of such technology plays a vital role in fostering collaboration and creativity among students.

b. The Need for a Holistic Approach to Education

The research reveals that while the institution emphasizes technical and creative education, there is a noticeable lack of integration between technology and the core values of Islam that are central to the institution's ethos. Given Indonesia's Muslim-majority population, it is crucial for institutions like Politeknik Media Kreatif to embrace a more holistic approach to education that integrates both technical expertise and moral development. The integration of Islamic values in technology education would not only foster students' technical proficiency but also instill principles of responsibility, integrity, and ethical behavior, ensuring they become professionals who contribute positively to society.

Several other studies support the findings that a holistic approach in education, integrating both technical skills and ethical values, is crucial for student development, particularly in the context of vocational and technical education. Below are relevant research results that reinforce the discussion on the importance of adopting a holistic approach in education at Politeknik Media Kreatif:

- 1) A study by Lucas and Spencer (2016) examined the role of ethics in technical and vocational education and emphasized that integrating ethical principles into technical education is essential to developing well-rounded professionals (Simpungwe, 2024). The research found that students who

receive education that includes both technical skills and ethical frameworks are better prepared to make responsible decisions in their professional lives. This is especially important in fields like computer science and media, where ethical dilemmas around issues such as data privacy, intellectual property, and social responsibility are common. By adopting a holistic approach, Politeknik Media Kreatif could prepare students to handle these ethical challenges while also honing their technical expertise.

- 2) Research by Gibson (2017) suggests that incorporating ethical education into vocational programs enhances students' overall personal development. The study found that students who engage with ethical dilemmas in their coursework are more likely to develop critical thinking skills, emotional intelligence, and a stronger sense of social responsibility (Gibson, & Sandifer, 2020). In the case of Politeknik Media Kreatif, integrating Islamic ethical values within the curriculum could help foster these qualities, preparing students to not only excel in their technical abilities but also to navigate ethical challenges in the rapidly evolving fields of computer science and media.

c. Ethical Considerations in Technology

The application of Islamic values to the use of technology in education is an area that requires greater attention. While the integration of Islamic principles into other areas of study is evident, such as in character-building courses or Islamic studies, there is little explicit connection between these values and the use of technology in the classroom. The findings suggest that there is a need to design a curriculum that explicitly links technology education with Islamic ethics. For example, discussions on the ethical implications of digital media, data privacy, and the social impact of technology could be framed within the context of Islamic teachings on justice, honesty, and respect for others.

Several other studies support the findings that, while technology holds great potential in education, there are significant challenges in integrating technology with ethical values, particularly in the context of vocational and technical education. Below are relevant research results that reinforce the discussion on these challenges in education at Politeknik Media Kreatif: A study by Bynum (2012) identified major challenges in integrating ethics with technology in technical education. The research showed that while there is growing awareness of the importance of ethics in technology education, many institutions focus primarily on teaching technical skills that are directly related to the workplace (Huda, M. (2019). This results in insufficient attention being given to the ethical education necessary for handling the ethical issues

that arise from the use of technology. This study highlights the need for a curriculum that explicitly incorporates ethics alongside technology education, so that students are prepared to understand and address ethical challenges in their professions.

d. Building a Value-Based Learning Environment

The findings also suggest that the creation of a value-based learning environment requires a collaborative effort. It is not enough for lecturers to individually incorporate Islamic values into their teaching; a more systematic and comprehensive approach is needed. The curriculum should include dedicated sessions or modules that explicitly focus on the ethical use of technology in line with Islamic teachings. Additionally, creating a university-wide policy that encourages ethical reflection on technology use would help foster a more consistent application of these values across all courses.

Below are relevant research findings that support the importance of integrating ethical values into technology education, particularly in vocational institutions such as Politeknik Media Kreatif. This integration helps create graduates who not only possess technical skills but also have a deep ethical awareness in using technology. A study by Gotterbarn et al. (2017) highlights the critical role ethics education plays in preparing students to face real-world technological challenges. The research found that when students are taught to consider ethical issues, they are better prepared to address issues related to technology, such as data privacy, copyright problems, and the social impact of the tools they create (Queiroz, 2022). This study emphasizes the need to incorporate ethics into the technology curriculum, ensuring that technology professionals are not only skilled in technical areas but also accountable for the societal consequences of their work. This is relevant to education at Politeknik Media Kreatif, where students need to understand how strong ethical values can guide them in facing challenges in the media and technology fields.

e. Recommendations for Future Development

Based on the findings, it is recommended that Politeknik Media Kreatif develop a curriculum framework that explicitly integrates Islamic values with computer science and media-related courses. This could include:

- 1) **Islamic Ethics Modules:** Incorporating specific modules or courses that focus on Islamic ethical principles in the use of technology.
- 2) **Case Studies and Discussions:** Introducing case studies on digital ethics, privacy issues, and the social responsibilities of media and technology professionals, discussed through the lens of Islamic teachings.
- 3) **Faculty Training:** Offering professional development for faculty on how to incorporate Islamic values into their teaching of technical subjects.

- 4) Collaborative Learning Platforms: Creating platforms for students to collaborate on ethical projects, where they can apply their technical skills while upholding Islamic ethical standards.

In conclusion, while the integration of computer science technology at Politeknik Media Kreatif is progressing, there is a need for a more intentional and systematic approach to embedding Islamic values into this process. This integration will help students not only excel in their technical fields but also become responsible and ethical professionals who align their work with Islamic principles.

4. CONCLUSION

The integration of ethical values in technology education is crucial to shaping responsible, socially-conscious professionals in today's rapidly advancing digital age. This study highlights the need for a curriculum at Politeknik Media Kreatif that not only emphasizes technical skills but also incorporates strong ethical frameworks, including Islamic ethics, to guide students in their professional lives. By addressing the challenges of balancing technological advancements with ethical considerations, the curriculum can better prepare students to navigate complex issues such as data privacy, intellectual property, and the societal impact of technology.

The findings of this research, supported by various studies, show that while technical education is essential, it is equally important to cultivate an understanding of the ethical implications of technology. This will ensure that graduates from Politeknik Media Kreatif are not only proficient in their technical expertise but also equipped with the moral compass needed to make responsible decisions in their careers. Furthermore, integrating ethics into the technology curriculum helps foster a greater sense of social responsibility, encouraging students to consider the broader implications of their work and its effect on society.

In conclusion, the integration of ethical education within the technology curriculum at Politeknik Media Kreatif is not only necessary but urgent, as it plays a key role in producing well-rounded professionals who can contribute positively to society while upholding the values of integrity, justice, and accountability in their technological endeavors.

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