

NAVIGATING THE NEXUS OF TECHNOLOGY AND CHARACTER DEVELOPMENT IN EDUCATION: A QUALITATIVE COMPARATIVE ANALYSIS

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Firman Nugraha¹, Muaripin², Vidia Ayundhari³, Yudha Andana Prawira⁴

Universitas Islam Bunga Bangsa Cirebon, Indonesia^{1,2}

Balai Diklat Keagamaan Bandung, Indonesia^{3,4}

³E-mail: bpkabdg@gmail.com

Abstrak

Artikel ini mengkaji hubungan kompleks antara teknologi dan pengembangan karakter dalam pendidikan, dengan fokus pada konteks Indonesia serta perbandingan dengan Swedia. Studi ini mengeksplorasi tantangan dan peluang yang muncul seiring dengan semakin terintegrasinya teknologi dalam dunia pendidikan. Dengan menggunakan analisis perbandingan kualitatif, penelitian ini meneliti bagaimana kemajuan teknologi memengaruhi transformasi pendidikan dan keterkaitannya dengan kebutuhan industri. Hasil penelitian menunjukkan bahwa meskipun teknologi memiliki dampak transformatif dalam pendidikan, integrasinya dalam pengembangan karakter menghadirkan tantangan budaya dan nilai yang unik. Negara seperti Indonesia, di mana nilai tradisional, religius, dan etika memainkan peran penting dalam pendidikan, menghadapi tantangan yang berbeda dibandingkan dengan Swedia, yang menerapkan pendekatan pendidikan yang sangat digital dan sekuler. Melalui analisis perbandingan, penelitian ini menyoroti perbedaan strategi yang diterapkan kedua negara, serta menekankan perlunya pendekatan seimbang dalam memanfaatkan teknologi tanpa mengorbankan identitas budaya dan pendidikan moral. Selain itu, peran pendidik menjadi sangat krusial dalam transisi ini, di mana mereka harus mampu beradaptasi dengan transformasi digital sambil tetap memastikan pengembangan karakter siswa secara holistik. Studi ini menekankan perlunya kebijakan strategis dan kerangka pedagogis yang dapat menyelaraskan kemajuan teknologi dengan pelestarian nilai etika dan budaya. Dengan memberikan wawasan tentang bagaimana berbagai negara menghadapi tantangan ini, penelitian ini berkontribusi pada diskusi global mengenai tren pendidikan di era digital.

Kata Kunci: Teknologi Pendidikan, Pengembangan Karakter, Nilai Budaya dan Etika

Abstract

This article examines the intricate relationship between technology and character development in education, focusing on the Indonesian context while drawing comparisons with Sweden. It explores the challenges and opportunities that arise as technology becomes increasingly integrated into educational settings. Employing a qualitative comparative analysis, this study investigates how technological advancements influence educational transformation and its interconnectedness with industrial demands. The findings reveal that while technology has a transformative impact on education, its integration into character development presents unique cultural and value-based challenges. Countries like Indonesia, where traditional, religious, and ethical values play a significant role in shaping education, face different obstacles compared to Sweden, which adopts a highly digitalized and secular approach. Through comparative analysis, the study highlights these contrasting strategies, emphasizing the need for a balanced approach that leverages technology while safeguarding cultural identity and moral education. Furthermore, the role of educators is crucial in this transition, requiring them to adapt to digital transformations while fostering students' holistic character development. This research underscores the need for strategic policies and pedagogical frameworks that harmonize technological advancements with the preservation of ethical and cultural values. By offering insights into how different nations navigate these challenges, the study contributes to the broader discourse on global educational trends in the digital era.

Keywords: Educational technology; Character Development; Cultural and Ethical Values

INTRODUCTION

The fast development of ICT has fundamentally changed the industrial environment in many fields, as well as in education. In the learning paradigm that is based on Islam, education relies on four pillars: (1) learning is manifested through changes in behavior as a result of experience, (2) learning

involves observation, reading, imitation, experimentation, and listening, (3) learning is marked by a change in performance, and (4) learning is envisioned as a systematic process or procedure (Schwab, 2017; Lee et al., 2018). The above principles highlight the experiential and dynamic nature of education, where digital technology plays a central role in facilitating and enhancing learning experiences. Moreover, various domains are heavily influenced by technological advancements with regard to services, information processing, and decision-making (Heintze & Bretschneider, 2000; Venkatesh, Morris, & Ackerman, 2000; Prawira, Ayundhari, & Kurnia, 2021).

This evolution is ubiquitous throughout the education sector, where the relationship between industry and academia has grown to depend more on one another (Tan et al., 2018). The synergy between the two domains is witnessed through the manner in which innovations within education are facilitated by technological innovations driven by players in the industry sector (Prima Lita, Fitriana Faisal, & Meuthia, 2020; Mady et al., 2023). Thus, the competitiveness of the business sector is underpinned by the presence of graduates who possess industry-relevant skills and competencies. This mutual relationship underscores the need to balance educational offerings with the changing demands of industry in order to prepare graduates with the requisite skills to survive in a technology-driven environment.

Learning practices adopt technology as an acceleration of access to knowledge sources. Teachers are required to be adaptive to technology to provide new experiences in student learning. However, some developed countries are reverting to old patterns. In particular, students are again invited to enjoy reading the printed version of the book rather than the digital version (Streiffert, 2020). In an era characterized by rapid technological advancements and the pervasive integration of digital tools in education, the resurgence of traditional learning methods is a fascinating phenomenon (Komara, 2018).

Mulyadi (2014) stated that countries like Sweden and Japan have been at the forefront of embracing classic learning patterns, symbolized notably by a shift towards printed books and traditional educational approaches. This shift is driven by concerns about digital fatigue, reduced attention spans, and the cognitive benefits of printed materials over digital screens. The preference for printed books aligns with educational philosophies that emphasize deep learning and critical thinking, suggesting that while digital tools provide accessibility and engagement, traditional methods remain vital for comprehension and retention.

Amidst the pervasive digital revolution, both Sweden and Japan have witnessed a resurgence of interest in traditional methods of education (Hasibuan & Ferdinal, 2020). While this might seem paradoxical in an age where technology dominates every sphere of life, the decision to revert to printed books and classic learning patterns is rooted in a deeper understanding of educational philosophy and its implications on student learning and development.

Sweden, known for its progressive and innovative education system, surprised many by emphasizing a return to printed books and traditional learning. This shift is not a rejection of technology per se but rather a recalibration of educational approaches. The Swedish education system recognized the importance of cultivating critical thinking, deep comprehension, and fostering a love for learning, aspects that some argue are better nurtured through physical books.

Their emphasis on the 21st-century skills (4Cs: Critical Thinking, Creative Thinking, Collaboration, and Communication) remains intact, and they perceive the adoption of printed books as a means to build foundational skills and habits essential for overall character development (Karakoyun, F., & Lindberg, O. J., 2020).

Similarly, Japan, renowned for its technological prowess, witnessed a resurgence of interest in printed books and traditional learning methods. The embrace of traditional methods reflects a societal respect for heritage and culture (Pregowska, A., Masztalerz, K., Garlińska, M., & Osial, M., 2021). The Japanese education system recognizes the value of 'yomikata' or 'the way of reading' as an integral part of their cultural identity.

The decision to reintegrate printed books is rooted in the belief that these traditional methods foster a deeper understanding, concentration, and comprehension, aspects that digital mediums might not fully encapsulate (Asyari, Ismaya, & Ahsin, 2021) and (Ramadhani, 2018). The reversion to printed books and classic learning patterns is not solely about the medium of instruction; it signifies a reevaluation of educational values. Traditional methods often emphasize slow and deep

learning, encouraging focus, reflection, and critical analysis, which proponents argue can sometimes be compromised in a digitally saturated environment.

The tactile experience of flipping through pages, the ability to annotate, and the absence of digital distractions are factors cited for the preference of printed books. Moreover, classic learning patterns promote a sense of cultural heritage and identity, providing a deeper connection to the past. The resurgence of traditional methods in the education systems of Sweden and Japan serves as a poignant reminder that progress doesn't always necessitate the abandonment of tradition. Instead, it's a harmonious blend of old wisdom and new innovation that creates a holistic learning environment.

While technology continues to play an indispensable role in modern education, the reintegration of classic learning methods symbolizes a nuanced approach towards education—one that values the virtues of both the past and the present. Sweden and Japan's embrace of printed books and traditional learning patterns is not a rejection of progress but rather a testament to the belief that a well-rounded education draws from the best of both worlds, honoring tradition while embracing the future.

Based on the picture of efforts to re-display the tradition of reading non-digital books in developed countries, this provides a new space to read the experience of Indonesia. Indonesia, since this technology was developed experienced some pros and cons of its own. One of the things that comes to the fore is the issue of character. As a country with a majority Muslim population composition and has its own conception of standards of values and character (Pajariato, H., Pribad, I., & Sari, P., 2022; Hadisi, L., Hakim, M. R., Musthan, Z., & Nashihin, H., 2023; and (Prawira et al., 2021). Religion is always present in various meanings and definitions including character.

METHOD

Within the current learning environment, pedagogical practice has increasingly involved technology to enhance the accessibility of information. Educators are supposed to be flexible when utilizing technological innovations to deliver innovative learning experiences. Yet, certain developed nations have registered a downturn towards conventional modes of learning, especially through readopting printed texts within their learning systems (Streiffert, 2020). This phenomenon raises fundamental questions about the role of technology in teaching and learning environments and the factors influencing decisions to revert to conventional methods. Using a Qualitative Comparative Analysis (QCA), this research explores the revival of classical learning methods in Sweden and Japan, and reflects on the implications for Indonesia. QCA is a robust methodological instrument for discerning patterns and cause-effect relations in complicated social phenomena, especially in comparative education research. It enables an in-depth examination of how varied national contexts influence the adoption—or re-adoption—of classical pedagogy.

Amidst the period of fast-paced technological development, both Sweden and Japan have maintained their faith in conventional pedagogical methods, most prominently through re-emphasized focus on printed media and conventional teaching techniques (Komara, 2018; Mulyadi, 2014). This revival does not necessarily signify the rejection of e-learning, but rather an intentional strategic change to complement contemporary technological tools with pedagogical fundamentals (Hasibuan & Ferdinal, 2020). Sweden's education system, with its progressive nature, has put great emphasis on the use of printed books to promote critical thinking, good understanding, and a genuine interest in knowledge acquisition (Karakoyun & Lindberg, 2020). Japan has also revived printed books within a wider cultural and educational environment, based on the understanding of the importance of 'yomikata' (reading style) for preserving intellectual wealth, concentration, and cultural heritage (Pregowska et al., 2021).

The rationale for these shifts includes not just pedagogical practice but also broader cultural and philosophical elements. Traditional teaching methods emphasize deep learning, reflection, and critical analysis—qualities that some teachers argue are compromised in a digitally saturated environment (Asyari, Ismaya, & Ahsin, 2021; Ramadhani, 2018). The tactile interaction that comes with turning printed pages, the possibility of marginalia, and the absence of digital distraction all work to reinforce the preference for printed texts. Besides, traditional learning models foster a connection with heritage, thereby promoting national identity and educational values.

This research discusses how Indonesia addresses the same challenges and opportunities by learning from Sweden and Japan. There have been continuing debates within the Indonesian educational system regarding the influence of technology on the development of student character. Being a nation with a predominantly Muslim population, Indonesia's education system is heavily influenced by the religious and cultural values of the country (Pajarianto, Pribad, & Sari, 2022; Hadisi et al., 2023; Prawira et al., 2021). The discourse on character education is closely related to religious interpretations of moral and ethical development. Here, technology integration in education is both welcomed and opposed, raising fundamental questions on how the digital technologies can be reconciled with traditional educational values.

With a Qualitative Comparative Analysis, this study provides an in-depth understanding of how different nations balance technological innovation with preserving cultural and educational heritage. The examples of Sweden and Japan provide useful lessons for the possible directions of Indonesia in creating an education system that incorporates contemporary digital technologies within its religious and ethical traditions. This study underscores the imperative of a balanced and contextually appropriate educational strategy—one that is receptive both to the benefits of technological innovation and to the abiding merit of conventional educational traditions.

RESULTS AND DISCUSSION

Indonesia's Experience with Technology in Education

In the midst of other countries discussing how technology is an effective tool to accelerate the achievement of goals (Major, L., Francis, G. A., & Tsapali, M., 2021), Indonesia is still struggling with what impact technology has on the future character of students (Anwar, S. (2018); Faiz, A., Soleh, B., Kurniawaty, I., & Purwati, P., 2021); Casika, A., Lidia, A., & Asbari, M. (2023). Indonesia, like many other nations, grapples with the complex relationship between technology and education. While technology offers remarkable advancements and opportunities, it also presents challenges that demand critical consideration, especially within the realm of educational settings. The duality of technology in Indonesia's perspective reflects both positive and negative dimensions, extending beyond mere adult supervision and manifesting notably in policies within Islamic schools concerning smartphone use (Spiekermann, S., Krasnova, H., Hinz, O., Baumann, A., Benlian, A., Gimpel, H., & Trenz, M., 2022).; Safitri, T. N., 2020).

Technology is always of double value (Mulligan, D. K., Kroll, J. A., Kohli, N., & Wong, R. Y., 2019). It has both positive and negative dimensions. Especially when its use is beyond adult supervision (Massie, A. Y., & Nababan, K. R., 2021). Hesitancy, for example, is seen in some Islamic school policies that on the one hand adopt technological developments, on the other hand prohibit students from bringing smartphones into the classroom (Safitri, T. N., 2020); Massie, A. Y., & Nababan, K. R., 2021).

The pervasive influence of technology transcends boundaries, and its impact on young minds is a subject of concern. In Indonesia, as elsewhere, the unmonitored use of technology among children and adolescents raises apprehensions about its potential adverse effects. Issues such as excessive screen time, exposure to inappropriate content, and social media addiction are prevalent concerns affecting students' well-being and academic performance (Neophytou, E., Manwell, L. A., & Eikelboom, R., 2021). Furthermore, the proliferation of misinformation and the erosion of critical thinking skills due to over-reliance on search engines and instant information access pose challenges for educators striving to nurture analytical and evaluative skills among students.

These conditions change some views of the use of technology in learning. For example, Sweden again recommends that its students access printed books instead of digital books. The reason for Sweden's return to the use of printed books is certainly different from Indonesia in the limits of technology utilization in the classroom. They are still in the context of implementing the 21st century character known as the 4Cs (Critical Thinking, Creative Thinking, Collaboration, and Communication). They make the bold step of returning to classic patterns in the context of building habits and basic skills that will in turn become their foundation in the later development of character (Scheerens, J., van der Werf, G., & de Boer, H., 2020); Kress, G., Selander, S., Säljö, R., & Wulf, C. (Eds.), 2021).

While Indonesia, restrictions on the use of technology in the class tend to be for value reasons and limitations of the tool itself. Moreover, the implementation of technology in educational institutions in terms of this aspect becomes a dilemma in itself. How to provide quality education with and or without the presence of technology in their midst. In Islamic schools across Indonesia, the incorporation of technology faces a unique challenge: the regulation of smartphone usage. While technology integration is seen as essential for modern education, Islamic schools grapple with the delicate balance between harnessing the benefits of technology and safeguarding religious values and norms (Safitri, T. N., 2020).

Several Islamic schools have instituted policies restricting or prohibiting smartphone use within school premises (Syahrudin, H., Ramadhan, I., Adlika, N. M., Hardiansyah, M. A., Olendo, Y. O., & Arifiyanti, F., 2022). These policies stem from concerns regarding distractions during learning hours, potential exposure to unfiltered content conflicting with Islamic teachings, and preserving a conducive learning environment conducive to spiritual growth. However, this approach also presents a conundrum (Casika, A., Lidia, A., & Asbari, M., 2023). The restriction of smartphones might hinder access to educational resources and innovative learning tools that could otherwise enhance students' academic experience. The challenge lies in striking a balance between leveraging technological benefits and preserving religious and cultural values.

The duality of technology in Indonesian education highlights the necessity for a nuanced approach. Embracing the positive aspects of technology while mitigating the negative repercussions necessitates collaboration among educators, policymakers, parents, and students themselves (Trince, M., Hamsiah, A., Asmara, A., & Amer, M. A. B., 2023). Efforts to integrate technology responsibly must involve comprehensive digital literacy programs, promoting ethical and critical usage among students. Moreover, dialogues and partnerships between schools, parents, and technology providers can foster a more informed and balanced approach to technology integration in education.

In the context of Islamic schools, a thoughtful implementation of technology guidelines, coupled with discussions on digital ethics and values, can align technological advancements with religious teachings without compromising educational quality (Sedgwick, 2001). The duality of technology in Indonesia's educational landscape underscores the imperative for a balanced approach. While acknowledging the vast benefits technology offers in education, it's equally crucial to address the challenges it poses, especially in environments where cultural, religious, and ethical values hold significant importance.

This learning challenge is a new direction in the culture of innovation in the world of Islamic education. School principals and teachers are required to adapt to the wave of technology while being guardians of religious norms and values for the safety of students. By recognizing and navigating the positive and negative aspects of technology in education, Indonesia can chart a path toward harnessing the transformative potential of technology while preserving its unique cultural and religious heritage, ensuring holistic and meaningful educational experiences for its students.

Balancing Quality Education and Technology Implementation

Indonesia stands at a crossroads, grappling with the delicate balance between providing quality education and integrating technology into its educational landscape. Educational institutions across the archipelago face a recurring dilemma, seeking to leverage the benefits of technology while ensuring the delivery of high-quality education. This conundrum necessitates a nuanced approach and the formulation of strategic methodologies to uphold educational excellence, both with and without technology.

There are many different obstacles to overcome when integrating technology into Indonesian schools. One of these is weighing the advantages of digital tools against any potential disadvantages (Sudibjo, N., Aulia, S., & Harsanti, H. R., 2022; Damayanto, A., Bangkara, B. A., Abidin, A. Z., Heryani, A., & Maruf, I. R., 2022). While there is no denying that technology increases access to educational resources, encourages student participation, and makes personalised learning experiences possible, its unchecked use can have unforeseen consequences like decreasing critical thinking abilities, cognitive passivity, and decreased problem-solving skills. Moreover, educational institutions encounter dilemmas regarding access to technology. Disparities in infrastructure, resources, and internet connectivity create an imbalance in technological access

among schools, thereby widening the educational gap between urban and rural areas (Hasin, I., & Nasir, M. K. M., 2021); Bati, T. B., & Workneh, (2021). This digital divide poses a significant obstacle in ensuring equitable access to quality education for all Indonesian students. Additionally, concerns persist regarding the potential distraction and misuse of technology, impacting students' focus, social interaction, and overall well-being.

In navigating this complex landscape, educational institutions in Indonesia are adopting strategic approaches aimed at balancing quality education with or without extensive reliance on technology.

1. **Hybrid Learning Models:** Institutions are embracing hybrid learning approaches that blend traditional teaching methodologies with technology-infused tools. This model ensures the preservation of conventional educational practices while integrating technology to enhance learning outcomes.
2. **Focus on Digital Literacy:** Prioritizing digital literacy programs equips students with essential skills to navigate the digital landscape responsibly. By fostering critical thinking, ethical usage, and information evaluation, students become adept at utilizing technology as a tool for learning rather than succumbing to its distractions.
3. **Equitable Access:** Initiatives aimed at bridging the digital divide are gaining traction. Efforts to provide equal access to technology and internet connectivity, particularly in remote areas, aim to ensure that all students have equal opportunities to benefit from technological advancements.
4. **Curriculum Adaptation:** Schools are revising their curriculum to include technology-integrated subjects and skill sets relevant to the modern digital era. This adaptation enables students to acquire both foundational knowledge and technological competencies.
5. **Emphasis on Teacher Training:** Educator training programs focusing on technology integration empower teachers to leverage technological tools effectively. Equipping educators with the necessary skills ensures their ability to facilitate meaningful and impactful learning experiences for students.

The pursuit of quality education in Indonesia involves a delicate balancing act between leveraging the advantages of technology and preserving the essence of traditional education. The strategic adoption of technology as a facilitator rather than a replacement for conventional learning methodologies is pivotal. By implementing a holistic approach that considers equitable access, digital literacy, curriculum adaptation, and teacher training, Indonesian educational institutions can navigate this intricate balance, ensuring that technology complements rather than supersedes the core values of quality education, fostering a generation of digitally competent and academically adept individuals.

The Challenge of Technology in Islamic Education

Indonesia, a country with a predominantly Muslim population, is witnessing a profound transformation in its educational landscape, particularly within Islamic educational institutions. The integration of technology into Islamic education presents a unique set of challenges that demand a delicate balance between embracing innovation culture and safeguarding religious norms for student safety (Baroroh, 2004). This intersection necessitates a nuanced approach to ensure the harmonious integration of technology while preserving the core tenets of Islamic teachings.

Islamic educational institutions in Indonesia are at the forefront of adapting to the digital era while staying rooted in traditional Islamic teachings. There is a growing recognition of the potential benefits technology can offer in enhancing learning experiences, facilitating access to religious texts, and fostering global connectivity among Islamic scholars and students. The adoption of innovative teaching methodologies, online platforms for Qur'anic studies, and digital libraries preserving Islamic literature represent the progressive strides toward modernization within Islamic education. This shift towards technology signifies a commitment to remain relevant in an increasingly digitized world while preserving the essence of Islamic teachings. However, the assimilation of technology in Islamic education poses a significant challenge—balancing technological adaptation with adherence to religious norms and ensuring student safety. Islamic

values emphasize modesty, ethical conduct, and adherence to religious principles, which sometimes conflict with unrestricted technology usage.

Educational institutions face the responsibility of safeguarding students from potential exposure to inappropriate content, maintaining a conducive learning environment, and upholding religious values amidst the vast digital landscape. The integration of technology must align with Islamic ethics and principles to ensure that its utilization serves the betterment of students without compromising their spiritual and moral development.

To navigate these challenges effectively, Islamic educational institutions in Indonesia are adopting comprehensive strategies:

1. Development of Islamic Tech Guidelines: Formulating clear and comprehensive guidelines for the ethical and responsible use of technology within Islamic educational settings. These guidelines encompass digital ethics, content filtering, and guidelines for teachers, students, and parents.
2. Digital Literacy with Religious Emphasis: Prioritizing digital literacy programs that integrate Islamic teachings. This approach aims to empower students with the skills to navigate the digital realm while aligning with religious values and ethics.
3. Collaboration between Scholars and Technologists: Encouraging collaboration between Islamic scholars and technology experts to develop and endorse Islamic-centric technological tools. These tools promote Islamic teachings, ensuring they are aligned with religious principles.
4. Constant Monitoring and Supervision: Implementing rigorous monitoring and supervision mechanisms to ensure adherence to guidelines and mitigate potential risks associated with technology use.

The challenge of technology in Islamic education of Indonesia underscores the significance of a balanced approach. The integration of technology should not overshadow the core values and teachings of Islam but rather complement them. By embracing technological advancements while upholding religious norms, Indonesia's Islamic educational institutions can foster a generation of digitally adept individuals grounded in Islamic ethics, ensuring that technology serves as a tool for enlightenment and spiritual growth while preserving the essence of Islamic teachings.

CONCLUSION

The transformative impact of technology on education and its interconnectedness with the industrial world. The cultural and value-based challenges faced by countries like Indonesia in integrating technology into education, especially in character development. The contrasting approaches of countries like Sweden and Indonesia towards technological adoption in education. The necessity for a balanced approach in leveraging technology while preserving cultural, religious, and ethical values in education. The role of educators in adapting to technological advancements while ensuring the holistic development of students' character. So that the use of technological transformation in the world of education does not affect the character of students in Indonesia. In other words, Indonesian students remain with their Indonesian character, religious character, high social character, as well as Indonesian cultural character and values, even though they have used the latest technology during the education process.

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