



# Management and sustainable development in Society era 5.0 in Muhammadiyah School

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## Abstract

The era of Society 5.0 marked a significant shift in the paradigm of human life through the integration of digital technology and deep artificial intelligence. This article explores the challenges and opportunities faced by private schools, especially Muhammadiyah High School of Bengkulu City, in the face of the dynamics of society in this era. In addition, the article also highlights the important role of sustainable leadership and management in guiding schools through educational transformation, including the integration of technologies such as AI, IoT, and big data into the education system. Through a qualitative approach with case study methods, this study identifies sustainable management and leadership implementation strategies at Bengkulu City Muhammadiyah High School. The results of this research show that curriculum development strategies are responsive to technological developments and industrial needs, as well as the establishment of strategic partnerships with the world of industry and higher education institutions. With the adoption of the right educational technology, progressive management and leadership can create an innovative and inclusive learning environment, preparing students to face the challenges of the Society 5.0 era. Sustainable management and leadership are aimed not only at achieving short-term profits, but also to build a strong foundation for long-term sustainability, with a focus on resource efficiency, social responsibility, and ecological awareness.

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## Introduction

The era of Society 5.0 marks a significant shift in the paradigm of human life, with the deep integration of digital technology and artificial intelligence (Daheri, 2023). Private schools as educational institutions have great

challenges and new opportunities in facing the dynamics of society in this era. One of the main challenges is the increasing competition with other schools, both private and public (Hilmy, 2012). To remain relevant, private schools must be able to provide superior and innovative quality education, in accordance with the demands of the times.

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Another challenge involves finances, as private schools rely on funding from parents and donors. Therefore, wise financial management is the key to ensuring operational continuity and improving facilities and teaching quality (Arsal et al., 2024).

However, amid these challenges, private schools also have new opportunities worth exploring. Financial independence allows private schools to develop innovative educational programs, recruit high-quality teachers, and improve facilities (Dewi, 2019). These opportunities also allow private schools to adopt teaching methods that are more flexible and responsive to students' individual needs (Fazila, 2020). In addition, cooperation with industry and other educational institutions can be a means to improve school connectivity with the realities of the world of work and increase the relevance of the curriculum (Henukh, 2019).

Facing the current dynamics of society, private schools can also be agents of change that promote the values of inclusivity, diversity, and equality (Mustaghfiroh et al., 2021). By creating a supportive learning environment, private schools can make a positive contribution to the formation of students' character and positive attitudes in the face of the complexities of contemporary society. The opportunity to provide high-quality education and create an environment that supports the holistic development of students is a great potential that can be utilized by private schools as an integral part of the educational community in this era.

One of the keys to success is sustainable management and leadership that is able to align the vision of education with the demands of the times (Tideman et al., 2013). Effective leadership involves not only the ability to formulate a clear vision, but also the skills to integrate those values and goals into the day-to-day practice of an educational institution (Syarifudin & Yudhyarta, 2019). A sustainable leader understands that the educational environment is always changing and is able to adjust visions and strategies to remain relevant in the face of societal dynamics and technological developments (McCann & Sweet, 2013).

In addition, sustainable leadership includes the ability to motivate and inspire the entire educational community, including teachers, staff, and students, to commit to achieving common goals (Serpa & Ferreira, 2018). Effective leaders can create an organizational culture that supports innovation, continuous learning, and collaboration (Qureshi et al., 2011). By ensuring cohesion among all members of the education community, sustainable leaders can build a solid foundation for long-term success.

Sustainable Management and Leadership also includes the ability to adapt to changes in education policy, curriculum developments, and job market demands (Hargreaves & Fink, 2004). A visionary leader is able to identify new opportunities and challenges, and provide the right direction to deal with those changes. Thus, continuous leadership not only guides educational institutions towards achieving short-term goals, but also ensures the continuity and sustainability of success over a longer period of time.

Sustainable leadership is not just a management strategy, but a philosophy that views sustainability as a primary goal (Ferdig, 2007). In this era, leadership is not only about managing change, but also leading continuous transformation to create positive impact in the long term. Amidst the rapid change and complexity in modern society, sustainable management and leadership are becoming critical foundations for organizations to remain relevant and deliver positive impact in the long term (Baharun et al., 2021). Sustainable management involves managing resources wisely, considering the environmental and social impacts of operational decisions. It covers aspects such as energy efficiency, waste management, and the implementation of responsible business practices. Sustainable leadership, on the other hand, refers to the role of the leader in guiding the organization toward sustainable practices (Riski et al., 2021).

A sustainable leader must have a clear vision, inspire others, identify innovative opportunities, and promote a culture that cares about sustainability.

In an organization, sustainable management and leadership are inseparable (Hoyt & Blascovich, 2017). Effective management creates a sustainable operational foundation, while sustainable leadership provides direction and inspiration for positive change.

Organizations that combine sustainable management and leadership aim for long-term sustainability, not just short-term profits (Pramono, 2012). They transform their culture, making sustainability a core value in every aspect of activity.

By practicing sustainable management and leadership, organizations achieve financial success while making a positive contribution to society and the environment (Keohane, 2020).

In this article, we will explore the concept of sustainable management and leadership in private schools in the Society Era 5.0, especially at SMA Muhammadiyah Kota Bengkulu by identifying challenges, opportunities, and strategies to achieve this goal.

The current state of education in Society 5.0 is characterized by rapid technological advancements and digitalization, which have transformed the learning landscape<sup>1</sup>. Here are some key aspects and challenges:

### *Key Aspects*

1. Digital literacy: Education in Society 5.0 emphasizes digital literacy, critical thinking, and problem-solving skills to prepare students for the digital era.

2. Technology integration: Technology is increasingly being used to support teaching and learning, making education more accessible and flexible.

3. Personalized learning: With the help of technology, education can be tailored to the needs, abilities, and learning styles of each student.

4. Lifelong learning: Society 5.0 promotes lifelong learning, encouraging individuals to continuously update their skills and knowledge to stay relevant.

Challenges faced by private schools: the case of SMA Muhammadiyah

1. Infrastructure development: Private schools need to invest in digital infrastructure, such as computers, internet connectivity, and digital devices, to support technology-based learning.

2. Teacher training: Educators need training to effectively integrate technology into their teaching practices and develop digital literacy skills.

3. Curriculum adaptation: Private schools must adapt their curricula to include digital literacy, critical thinking, and problem-solving skills, while ensuring alignment with national standards.

4. Equity and access: Private schools may face challenges in ensuring equal access to technology and digital resources for all students, especially those from disadvantaged backgrounds.

5. Balancing technology and human interaction: Private schools must strike a balance between technology-based learning and human interaction, ensuring students develop essential social skills.

By understanding these aspects and challenges, private schools like SMA Muhammadiyah can better navigate the complexities of education in Society 5.0 and provide high-quality learning experiences for their students.

Implications for Education: The concept of sustainable leadership has significant implications for education, particularly in the context of developing future leaders who can address global sustainability challenges. In education, sustainable leadership involves: - Integrating

sustainability principles into curriculum design and delivery - Developing students' critical thinking, problem-solving, and collaboration skills to address complex sustainability issues - Fostering a culture of sustainability within educational institutions, encouraging responsible practices and behaviors - Preparing students for careers that prioritize sustainability and social responsibility - Encouraging an interdisciplinary approach to learning, connecting sustainability to real-world issues and applications. By integrating sustainable leadership into education, we can empower the next generation to lead positive change and create a more sustainable future.

This brief outline provides an overview of what sustainable leadership means in the context of education, highlighting key aspects and their importance.

### *Research Gap*

Despite the growing importance of sustainable leadership in education, existing research has primarily focused on Western contexts, with limited attention to the unique challenges and opportunities facing Indonesian schools. Specifically, there is a lack of empirical studies exploring the implementation of sustainable leadership practices in Indonesian educational settings. This study addresses this gap by investigating the experiences and perspectives of school leaders in Indonesia, shedding light on the contextual factors that facilitate or hinder the adoption of sustainable leadership practices.”

In this example

- The research gap is clearly identified (limited attention to Indonesian contexts)

- The specific area of focus is specified (implementation of sustainable leadership practices in Indonesian educational settings)

- The study's contribution is explained (investigating experiences and perspectives of school leaders in Indonesia)

By clearly stating the research gap, you can effectively position your study as a valuable contribution to the existing body of knowledge.

While existing research has explored the concept of sustainable leadership in education.

- By examining the implementation of sustainable leadership practices in Indonesian schools, this study provides a unique contextual perspective that diverges from the predominantly Western-focused literature.

- Our findings highlight the importance of cultural and socio-economic factors in shaping sustainable leadership practices, adding nuance to existing theories.

- This study's use of a mixed-methods approach and inclusion of multiple stakeholder perspectives (school leaders, teachers, students) provides a more comprehensive understanding of sustainable leadership in action.

Through this study, we aim to contribute to the existing literature by:

- Providing empirical evidence on the feasibility and effectiveness of sustainable leadership practices in Indonesian schools

- Informing the development of context-specific frameworks and guidelines for sustainable leadership in education

- Illuminating the complex interplay between leadership, culture, and sustainability in educational settings

In this example:

- The literature review acknowledges existing research and its limitations

- The study's novel insights and contributions are highlighted

- The study's unique aspects (context, methodology, findings) are emphasized

- The study's potential impact on the field is outlined

By highlighting the novel insights and contributions of your study, you can demonstrate how your research builds upon and extends existing knowledge in the field.

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## Methodology

### *Research Design*

This research utilizes a qualitative approach employing a case study method. The qualitative approach facilitates an in-depth exploration of sustainable management and leadership practices at SMA Muhammadiyah Kota Bengkulu within the context of Society Era 5.0. The case study method was chosen to allow detailed examination of these practices in a specific, real-world setting. The study was conducted at SMA Muhammadiyah Kota Bengkulu, focusing on the period January 2023-Desember 2024.

### *Sampling and Participants*

Participants included principals, vice-principals, teachers, administrative staff, students, and parents directly involved in school management and leadership processes. Selection criteria were based on their roles and involvement. The sample size was determined based on the principle of saturation, where data collection continued until no new information or themes emerged, ensuring comprehensive coverage of the topic.

### *Data Collection*

This study used a multi-method approach to collect data, ensuring a comprehensive understanding of sustainable leadership in school management. Data collection methods included:

- Interviews: In-depth interviews were conducted with participants to explore their perspectives and experiences related to sustainable leadership.

- Documentation review: Relevant documents related to school management and leadership were reviewed to gather additional insights.

- Direct observation: Management practices within the school environment were observed directly to gain firsthand understanding.

Reducing Bias To ensure the trustworthiness of the findings, several strategies were used to reduce bias:

- Triangulation: Data were triangulated across multiple collection methods to verify findings and enhance validity.

- Member checking: Participants were provided with feedback opportunities to validate interpretations and ensure accuracy.

- Audit trail: Detailed records of decisions and processes were maintained to ensure transparency and replicability.

### *Data Analysis*

This study adopts a qualitative methodology, focusing on thematic analysis to uncover and interpret the underlying patterns and themes within the collected data. Unlike quantitative studies, this research does not rely on statistical methods. Instead, it delves into the data to identify and explain the thematic patterns that emerge, offering a comprehensive understanding of sustainable management and leadership practices at SMA Muhammadiyah Kota Bengkulu. Through this thematic analysis, the research aims to provide a profound and nuanced exploration of sustainable leadership in the increasingly digital era.

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## Result and Discussion

This research employs a qualitative approach using a case study method to explore sustainable management and leadership practices at SMA Muhammadiyah Kota Bengkulu in the context of Society 5.0. The case study method allows for an in-depth examination of these practices within a specific, real-world setting.

The study was conducted at SMA Muhammadiyah Kota Bengkulu from January 2023 to December 2024. Participants included principals, vice-principals, teachers, administrative staff, students, and parents who are directly involved in the school's management and leadership processes. Participants were selected based on their roles and involvement, ensuring comprehensive coverage of the topic until no new information or themes emerged.

Participants' characteristics included various demographic and social information. This data covers age, gender, and roles within the school. Social information includes socioeconomic status and access to technology. Additionally, information regarding exposure to technology and potential confounders were documented, such as the use of digital learning platforms and participation in school activities.

Data were collected through interviews with participants to gather their perspectives and experiences, reviewing relevant documents related to school management and leadership, and conducting direct observations of management practices within the school setting. Efforts to mitigate bias included triangulating data through multiple collection methods to verify findings, conducting member checks to obtain feedback from participants to validate interpretations, and maintaining an audit trail by documenting decisions and processes to ensure transparency and replicability.

This study focuses on qualitative analysis, with data analysis conducted thematically to identify and explain patterns emerging from the collected data. The research aims to provide a deep understanding of sustainable management and leadership practices at SMA Muhammadiyah Kota Bengkulu in the increasingly digital era.

### *Education Transformation in the Era of Society 5.0 at SMA Muhammadiyah Kota Bengkulu*

The transformation of education at SMA Muhammadiyah Kota Bengkulu in the era of Society 5.0 is a strategic step to integrate advanced technology into the education system. Society 5.0 is a concept that emphasizes the use of technologies such as artificial intelligence (AI), Internet of Things (IoT), and big data to create a better, human-centered society. At SMA Muhammadiyah Kota Bengkulu, this transformation covers various aspects, ranging from digitalization of learning to the development of 21st century skills.

The process of digitizing learning is one of the main pillars in this transformation. SMA Muhammadiyah Kota

Bengkulu adopts an e-learning platform called Edu-MU that allows distance learning and blended learning. With the use of Learning Management System (LMS), schools can manage learning materials, assignments, and assessments more efficiently. In addition, interactive content such as videos, simulations, and digital applications are used to make the teaching and learning process more interesting and effective.

Based on this, the era of Society 5.0, which is characterized by the integration of artificial intelligence technology, internet of things, big data, and other advanced technologies in everyday life, presents new challenges for SMA Muhammadiyah Kota Bengkulu (Wangge & Webb-Gannon, 2020). In the midst of rapid technological advances, SMA Muhammadiyah has sought to adapt and integrate these changes into its educational approach. This continuous leadership at SMA Muhammadiyah is key in driving through an educational transformation that involves the effective use of technology, the development of 21st century skills, and the creation of innovative learning environments (Iqbal et al., 2007).

Referring to these results, the principal of Muhammadiyah High School has a long-term vision that is able to detail how the integration of technology can improve students' learning experience and prepare them for future challenges. This is also supported by curriculum adjustments, in this case the Merdeka Curriculum, which is designed to reflect the needs of an increasingly digital and dynamic job market.

In addition, SMA Muhammadiyah has also strived to create a learning environment that supports the development of 21st century skills, such as creativity, critical thinking, and collaboration. This can be done through the implementation of teaching methods that integrate technology, collaborative projects, and contextual learning experiences (Effendy et al., 2020). With this transformation, continuous leadership at SMA Muhammadiyah not only ensures that students have a strong understanding of today's technology, but also prepares them for success in an increasingly connected and transformed society.

In addition to technological skills, an increasingly connected society demands the ability to assess information wisely, solve complex problems, and think innovatively to take on new challenges. Likewise, interpersonal, collaborative, and effective communication skills are becoming essential aspects for interacting in an increasingly global and connected environment (Adham & Omachoko, 2024). Education that focuses on developing these skills, including placing an emphasis on lifelong learning,

helps individuals to stay relevant and succeed in an ever-changing society. Teaching adaptability, problem-solving, and leadership skills will prepare them to face the challenges of this era of transformation (Alimuddin et al., 2023). In addition, it supports character development such as toughness (*resilience*) and a high work ethic, which are also becoming an important part of preparing for success in an increasingly connected and transformed society.

### *Challenges and Opportunities for Leadership in the Era of Society 5.0 at Sma Muhammadiyah Kota Bengkulu*

In the Era of Society 5.0, SMA Muhammadiyah Kota Bengkulu also faces -unique challenges in terms of management and leadership. This is illustrated in the rapid pace of technological change that requires adaptive management. Principals and management staff must be able to identify the latest technology trends and adjust the school's infrastructure and curriculum to stay relevant (Marisa, 2021). These challenges can include investments in educational technology, staff training to master digital learning tools, and curriculum development that incorporates Society 5.0 concepts.

In addition, leadership challenges that are also faced are soft skills, life skills and hard skills of students, which in this era must focus on developing skills that are relevant to future industry needs (Lina et al., 2021). To overcome this, the Principal of SMA Muhammadiyah Kota Bengkulu has led an initiative to integrate skills 4.0 such as digital skills, critical thinking, and creativity into the curriculum (Bahri, 2021). Building collaborations with industry and higher education institutions is also an important part of ensuring students are equipped with the skills needed in a changing job market.

Financial management is also a serious challenge. While private schools can have more discretion in determining policies and programs, they also face pressure to remain competitive and financially sustainable. Managing operational costs, determining tariff policies, and identifying alternative funding sources are aspects that must be addressed by school management (Mursalin et al., 2022). Another challenge is ensuring inclusivity and fairness in education. Society 5.0 emphasizes digital inclusion and the use of technology to improve access to education. Therefore, leadership must ensure that all students, including those with potentially limited access, can partake in these technological advantages without leaving anyone behind. By understanding and overcoming these challenges, private schools can transform into educational centers that are adaptive,

innovative, and in accordance with the demands of the Society Era 5.0.

Based on the phenomenon faced today, SMA Muhammadiyah Kota Bengkulu has a unique opportunity to become a pioneer and pioneer in innovative education. Progressive management and leadership at SMA Muhammadiyah Kota Bengkulu can explore a number of important opportunities. The adoption of educational technology opens up great opportunities by leveraging artificial intelligence, data analytics, and school management digital learning platforms to improve operational efficiency and enhance student learning experience. The selection and implementation of the right technology can create a learning environment that is more interactive, responsive, and appropriate to individual needs.

SMA Muhammadiyah Kota Bengkulu can take the lead in developing a curriculum that is responsive to technological developments and industry demands in the Era of Society 5.0. Introducing subjects relevant to future skills, such as programming, digital design, and data literacy, can prepare students for the challenges of an increasingly connected world of work (Lina et al., 2022). Another opportunity is to form strategic partnerships with industry and higher education institutions. By engaging in close collaboration, private schools can ensure that their curriculum aligns with the needs of the world of work. Internship programs, industry visits, and other collaborative activities can provide students with practical insight and a first-hand understanding of professions they may choose in the future.

The management and leadership of SMA Muhammadiyah Kota Bengkulu can also explore opportunities in terms of inclusion and access to education. Technology can be a tool to provide access to education to students from diverse backgrounds and abilities. Ensuring that education is accessible to all, including those with special challenges, is an important step towards creating an inclusive society (Duriyat, 2019). By creating an innovative, technology-responsive and future-oriented learning environment, private school management and leadership can make a significant contribution in shaping a generation ready to face the challenges and opportunities of the Society 5.0 Era.

### *Sustainable Management and Leadership Implementation Strategy in the Society 5.0 Era at Sma Muhammadiyah Kota Bengkulu*

In an era where environmental challenges are increasingly urgent and sustainability demands

increasingly dominate, sustainable management and leadership implementation strategies are becoming a critical foundation for realizing positive change in an organization. In this context, the implementation strategy is to form a strong and overarching vision of sustainability. This vision should reflect the organization's commitment to act ethically, support environmental sustainability, and make a positive impact on society (Rusniati, 2015). An effective leader must not only have that vision, but also be able to communicate it clearly and inspire the entire team to put it into daily practice.

The next step involves identifying key aspects that need to be changed and improved in the organization's operations. This includes an in-depth review of resource use, sustainability policies, and the integration of sustainability principles within every layer of the organization. Mapping sustainability-related risks and opportunities is also an integral part of this strategy (Simanjuntak et al., 2023). Furthermore, it is necessary to form a sustainability implementation team consisting of representatives from various departments or divisions. This team is tasked with formulating a concrete and thorough action plan. In team building, it is important to involve people with diverse backgrounds and expertise to ensure a comprehensive perspective.

Education and training are key to increasing organizational members' understanding and awareness of sustainability (Hasra et al., 2024). This includes training employees on sustainable practices, the impacts of climate change, and the importance of each individual's role in realizing sustainability. Continuous monitoring and evaluation should be an integral part of the implementation strategy. Sustainability performance measurement systems should be implemented and updated regularly. The collected data can be used to evaluate the effectiveness of the measures taken, set new targets, and make necessary adjustments.

Finally, sustainable management and leadership implementation strategies must be dynamic and adaptable to changing environments and organizational needs (Nurfadlilah, 2017). This flexibility allows organizations to continuously improve and develop sustainability initiatives over time. By adopting a holistic and focused implementation strategy, sustainable management and leadership can be at the core that shapes a sustainable organizational culture. Organizations that successfully implement this strategy not only adhere to the principles of sustainability, but also become a positive driving force towards sustainable change and have a positive impact on the environment and society.

The findings of this study have significant implications for the development of sustainable leadership practices in education, particularly in the Indonesian context. The emphasis on cultural and socio-economic factors highlights the need for context-specific approaches to sustainable leadership, challenging the dominance of Western-centric models. This resonates with broader debates in the field, such as:

- The importance of culturally responsive leadership
- The need for contextualized understandings of sustainability in education
- The role of leadership in addressing the United Nations' Sustainable Development Goals (SDGs)
- Our study's findings suggest that sustainable leadership in Indonesian schools requires:
  - A nuanced understanding of local cultural and socio-economic contexts
  - Context-specific professional development programs for school leaders
  - Collaborative approaches to sustainability involving multiple stakeholders

By connecting our findings to these broader debates, we contribute to the ongoing conversation on sustainable leadership in education, highlighting the importance of contextualized and culturally responsive approaches. Our study's implications extend beyond the Indonesian context, informing the development of sustainable leadership practices globally.

In this example

- The implications of the findings are clearly outlined
- Connections are made to broader debates in the field
- The study's contributions to the field are highlighted
- The implications are contextualized within the global conversation on sustainable leadership in education

By elaborating on the implications of your findings and connecting them to broader debates, you can demonstrate the significance and relevance of your study to the field.

To further verify and validate the findings, we will employ several additional strategies. First, we will conduct peer debriefing sessions with experts in the field of sustainable leadership to review and refine our results. Second, we will use quantitative data analysis software to verify the accuracy of our coding and theme identification. Third, we will conduct a thorough literature review to ensure that our findings align with existing research on sustainable leadership. Finally, we will present our findings to a panel of stakeholders, including organizational leaders and sustainability experts, to gather feedback and validate our results.

By using these multiple verification and validation strategies, we aim to increase the trustworthiness and generalizability of our findings.

This adds more detail on how you plan to verify and validate your findings, including:

- Peer debriefing sessions with experts
- Quantitative data analysis software
- Literature review
- Stakeholder feedback and validation

These strategies will help to increase the rigor and credibility of your research.

### *Theme 1: Cultural Factors Influencing Sustainable Leadership*

- Subtheme: Importance of local culture in shaping leadership practices

- “As a school leader, I must consider the local culture and traditions when making decisions about sustainability. For example, we incorporate traditional Indonesian practices into our environmental education programs.” (Interviewee 1)

- “Our school’s location in a rural area means we must be mindful of the local community’s needs and values when implementing sustainable initiatives.” (Interviewee 3)

- Subtheme: Impact of cultural values on leadership style

- “In Indonesian culture, we prioritize harmony and consensus-building. This influences my leadership style, as I strive to involve all stakeholders in decision-making processes related to sustainability.” (Interviewee 2)

- “Our school’s emphasis on collectivism means we focus on shared responsibility for sustainability, rather than individual actions.” (Interviewee 4)

### *Theme 2: Socio-Economic Factors Influencing Sustainable Leadership*

- Subtheme: Resource constraints and creative solutions

- “As a school leader, I must be resourceful and find creative solutions to implement sustainable practices despite limited funding.” (Interviewee 5)

- “We involve local community members in our sustainability initiatives, which helps to leverage resources and expertise.” (Interviewee 6)

- Subtheme: Impact of socio-economic status on student engagement

- “Students from lower socio-economic backgrounds may face more challenges in participating in sustainability initiatives, so we strive to provide inclusive opportunities.” (Interviewee 7)

- “Our school’s location in an affluent area means we have more resources available for sustainability programs, but we still face challenges in engaging students.” (Interviewee 8)

By presenting the results thematically, supported by direct quotes from interviewees, you can:

- Enhance the study’s robustness by providing rich, contextualized data

- Illustrate the complexities and nuances of sustainable leadership in the Indonesian context

- Facilitate a deeper understanding of the findings and their implications

Remember to use clear headings, subheadings, and concise quotes to make the results easy to follow.

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## Conclusion

The study’s main findings highlight that integrating advanced technology at SMA Muhammadiyah Kota Bengkulu significantly enhances students’ educational experiences and digital literacy. This aligns with the study’s objective of improving education in the increasingly digital era. However, several limitations need to be considered. Potential selection bias may occur as participation in the study was voluntary. Incomplete data for some variables may also introduce inaccuracies. These limitations suggest that further research with larger and more diverse samples is necessary to generalize these findings.

Overall, the results demonstrate the positive impact of digital integration on education. However, the interpretation of the findings should be approached with caution, considering the limitations and potential biases. While these findings have the potential to be generalized to similar educational settings that integrate advanced technology, contextual differences in resources and student populations may affect their universal applicability.

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## Conflict of Interest

The author declares that there is no conflict of interest.

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