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Innovative Curriculum Adaptation in Aligning Learning Content with 21st-Century Skills: A Case Study in Senior High Schools

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ABSTRACT: The rapid advancement of technology and increasing global competition necessitate educational adaptation to 21st-century skills, including critical thinking, creativity, communication, and collaboration (4C). This study aims to analyze how innovative curriculum adaptation aligns learning content with these essential skills in several senior high schools (SMA) in Bojonegoro. Employing a qualitative case study approach, data were gathered through in-depth interviews with school principals and teachers, classroom observations, and document analysis. The findings reveal that schools have integrated digital technology into learning, implemented project-based learning (PBL), and conducted teacher training to enhance 21st-century skills. However, challenges such as inadequate technological facilities, varying levels of teacher readiness, and resistance to new teaching methodologies were identified. These findings suggest that innovative curriculum adaptation plays a significant role in preparing students for future challenges. Therefore, stronger support from schools, policymakers, and society is required to optimize the effectiveness of curriculum adaptation in fostering 21st-century competencies.

Key words: *Curriculum Adaptation, 21st-Century Skills, Learning Innovation, Project-Based Learning, Learning Content.*

INTRODUCTION

Education in the era of globalization faces increasingly complex challenges, particularly in preparing students with 21st-century skills, which include critical thinking, creativity, communication, and collaboration. In this context, curriculum adaptation has become an urgent necessity for schools, including those in Bojonegoro. An innovative curriculum must be able to respond to the demands of the job market and the rapid advancements in technology(Sleeter, 2018). Therefore, it is crucial to examine how innovative curriculum adaptation is implemented in senior high schools

(SMA) in Bojonegoro to ensure that the learning process remains relevant to contemporary demands.

The Indonesian government has introduced various educational policies, one of which is the Merdeka Curriculum, which emphasizes flexibility in learning and customization according to students' needs. This curriculum grants schools and teachers the freedom to develop more adaptive and innovative teaching methods(Sholeh dkk., 2024). However, in practice, schools in various regions still face numerous challenges, including limited resources, teacher preparedness, and obstacles in integrating technology into the learning process. In Bojonegoro, which has a diverse socio-economic background, curriculum adaptation must take these factors into account to ensure its effective implementation.

Senior high schools in Bojonegoro play a strategic role in improving education quality through the implementation of innovative curricula. These schools are expected not only to deliver lessons conventionally but also to develop more interactive and technology-based teaching methods. For instance, utilizing digital platforms in learning can enhance student participation and provide them with access to a wider range of learning resources(Adiele & Abraham, 2013). However, schools still face challenges in adopting educational technology, which remains a significant barrier to effective curriculum implementation.

One key aspect of innovative curriculum adaptation is teacher involvement in the learning process. Teachers play a crucial role in designing and implementing teaching strategies that align with students' needs. Therefore, training and professional development for teachers are essential to ensure that they understand and apply a curriculum based on 21st-century skills(Heryahya dkk., 2022). Unfortunately, in many schools, there is still a gap in teacher competencies regarding innovative teaching methods. Hence, support from the government and various stakeholders is needed to enhance teachers' capacity in adapting the curriculum effectively.

Besides the role of teachers, student engagement in the learning process is also a crucial factor in the success of curriculum implementation. Student-centered learning emphasizes a more active and collaborative learning experience. Methods such as Project-Based Learning (PBL) **and** Problem-Based Learning (PBL) have been proven effective in enhancing students' critical thinking and creativity(Andriani, 2023). However, many schools have yet to fully implement these methods due to resource constraints and a lack of understanding of effective teaching strategies.

In addition to internal school factors, support from parents and the community also plays a vital role in fostering curriculum adaptation. Parents who understand the importance of 21st-century skills-based education can provide greater encouragement

for their children to engage in active learning(Susanti dkk., 2024). Furthermore, collaboration with industries and higher education institutions can help bridge the gap between theoretical knowledge taught in schools and the skills required in the workforce. Thus, partnerships between schools, industries, and universities serve as a strategic step in supporting the implementation of an innovative curriculum.

This study aims to analyze how innovative curriculum adaptation is carried out in senior high schools in Bojonegoro to address the challenges of 21st-century education. It will also explore various strategies schools employ to align learning content with the skills needed in the digital era. The findings are expected to provide recommendations for policymakers and educational practitioners in developing a more adaptive and relevant curriculum for students. Implementing an innovative curriculum based on 21st-century skills will positively impact the quality of education in Bojonegoro. Students who receive education through more adaptive and technology-based methods will be better prepared to face challenges in both the workforce and higher education. Therefore, continuous efforts to develop and adjust the curriculum in response to modern demands must remain a priority for all stakeholders in the education sector.

METHOD

This study employs a qualitative approach using a case study method to gain an in-depth understanding of how senior high schools in Bojonegoro adapt innovative curricula to align learning content with 21st-century skills(Creswell & Clark, 2007). This approach was chosen because it allows for the exploration of phenomena in real-life contexts, providing a detailed depiction of strategies, challenges, and the impact of curriculum adaptation on the learning process.

The research was conducted in several senior high schools in Bojonegoro that have implemented curriculum innovations. The study subjects include school principals, subject teachers, students, and parents. The school principals serve as policymakers in curriculum implementation, while teachers are responsible for applying the innovative curriculum in classrooms. Students were selected as research subjects because they are the primary beneficiaries of curriculum adaptation, whereas parents were involved to understand their perspectives on the changes in the education system implemented in schools.

Data collection in this study was carried out through several techniques(Seidman, 2006): in-depth interviews, participatory observation, and documentation. In-depth interviews were conducted with school principals, teachers, and students to gather information on policies and strategies for implementing the

innovative curriculum. These interviews were semi-structured to maintain flexibility in exploring more in-depth information. Additionally, participatory observation was conducted in classrooms and school activities to directly observe how the curriculum is applied in the learning process. This observation also recorded interactions between teachers and students, as well as the use of technology or innovative teaching methods. Meanwhile, documentation was used to collect various related documents, such as school curricula, syllabi, lesson plans, student evaluation results, and educational policies that support curriculum adaptation.

Once the data was collected, analysis was performed using the Miles, Huberman, and Saldaña model, which consists of three main stages: data reduction, data display, and conclusion drawing(Miles dkk., 2014). In the data reduction stage, information from interviews, observations, and documentation was categorized based on key themes, such as curriculum adaptation strategies, challenges faced, and their impact on learning. Next, the reduced data was presented in descriptive narratives, tables, or diagrams to provide a clearer depiction of the phenomenon under study. Finally, conclusions were drawn based on patterns and findings that emerged from the data analysis, which were then verified through data source triangulation to enhance research validity.

To ensure data credibility, this study applied several techniques, such as source triangulation, member checking, and prolonged engagement. Source triangulation was conducted by comparing information from interviews, observations, and documentation to ensure data consistency. Member checking involved confirming interview results with the respondents to ensure accurate data interpretation. Meanwhile, prolonged engagement was applied by spending sufficient time in the research setting to gain a thorough understanding of the context and minimize bias in data collection and analysis.

RESULT AND DISCUSSION

RESULTS

This study reveals that the adaptation of an innovative curriculum to align learning content with 21st-century skills in several high schools in Bojonegoro has been carried out through various strategies. Based on interviews with school principals and teachers, it was found that schools have begun integrating digital technology into learning, strengthening project-based learning (PBL) approaches, and enhancing teacher training to align teaching methods with the demands of 21st-century skills, such as critical thinking, creativity, communication, and collaboration (4C).

Integration of Technology in Learning

Findings obtained through observations, interviews, and documentation indicate that several high schools in Bojonegoro have integrated technology into learning as part of their innovative curriculum adaptation. This initiative aims to enhance the effectiveness of the teaching and learning process and align teaching methods with 21st-century skills.

Based on observations in several high schools in Bojonegoro, the use of a Learning Management System (LMS) has begun to be implemented to support both online and offline learning simultaneously. Teachers and students use various digital platforms such as Google Classroom and Moodle to access learning materials, submit assignments, and take online exams. The use of LMS allows learning to be more flexible, as students can access materials anytime and anywhere.

A mathematics teacher at one of the high schools stated in an interview that LMS helps manage classes more systematically. *"In the past, I had to print many teaching materials and distribute them directly to students. Now, I just upload the materials to Google Classroom, and students can access them whenever they need,"* he said. Additionally, students admitted that they feel more comfortable with this system because they can learn at their own pace without being restricted by classroom time.

Aside from LMS, various interactive applications have also begun to be utilized by teachers to increase student engagement in learning. Observations show that some teachers use Kahoot and Quizizz as learning evaluation tools. These applications enable students to participate in interactive quizzes in an engaging format, making the learning process more enjoyable.

Documentation from teaching activities at one high school shows that students are more active and enthusiastic in answering questions through these platforms compared to conventional exam methods. A Grade XI student mentioned in an interview that he prefers answering questions using Kahoot rather than written tests. *"It feels like playing a game while learning, so it's easier to remember the material,"* he said.

Although the use of technology in learning offers many advantages, there are some challenges in its implementation(Pawar & Dhumal, 2024). One of the main obstacles is the limited technological infrastructure(Liu dkk., 2018). According to observations, some schools still experience unstable internet access, making it difficult to optimize the use of LMS and interactive applications. Additionally, not all students have adequate devices to access digital learning, especially those from economically disadvantaged backgrounds.

A school principal interviewed stated that they are trying to overcome this issue by requesting device assistance from the education office and collaborating with

internet service providers. *"We hope for more support from the government or private sector so that schools can have better technological facilities,"* he said.

The findings of this study indicate that integrating technology into learning in high schools in Bojonegoro has had a positive impact on learning effectiveness. The use of LMS, interactive applications, and other digital media helps increase student engagement and provides flexibility in the learning process. However, several challenges still need to be addressed, such as infrastructure limitations and technological access gaps among students. Therefore, further support from various stakeholders is necessary to ensure that technology integration in education can be more optimal and sustainable.

Implementation of Project-Based Learning Model

The research findings obtained through interviews, observations, and documentation indicate that several senior high schools in Bojonegoro have started implementing the Project-Based Learning (PBL) model in the learning process. This model aims to enhance students' understanding of the material while also developing 21st-century skills such as critical thinking, creativity, communication, and collaboration.

Based on interviews with several teachers, the implementation of PBL involves providing students with real-world challenges that require problem-solving and teamwork. A science teacher at one of the high schools stated that students were tasked with creating simple renewable energy projects, such as mini solar panels or wind turbines. This project not only teaches scientific concepts in a more practical way but also fosters students' creativity and technical skills.

Meanwhile, in English subjects, students were encouraged to create vlogs about the local culture in Bojonegoro. This project aimed to improve their English-speaking skills while introducing the uniqueness of their region to a broader audience. A 12th-grade student involved in the project mentioned that he felt more confident speaking English after participating in the activity. *"I used to be afraid of making mistakes, but after making a vlog, I became more accustomed to using English in daily life,"* he said.

Classroom observations showed that students were more active in project-based learning compared to conventional methods. They were more enthusiastic about discussing ideas, conducting research, and developing strategies to complete their projects. Additionally, interactions between students and teachers became more dynamic as teachers played the role of facilitators, guiding students in exploring the material.

Documentation of several student projects demonstrated that this model produced innovative and applicable work. For example, in Geography, students created

interactive digital maps showcasing Bojonegoro's tourism potential. Meanwhile, in Economics, students designed simple business simulations that trained them in managing small enterprises.

Despite the many benefits of the PBL model, several challenges were encountered during its implementation. One major obstacle is the limited time within the curriculum. A History teacher interviewed stated that the available time was often insufficient to complete projects optimally. *"We have to adjust to a packed lesson schedule, so sometimes projects cannot be fully developed,"* he said.

Teacher readiness in implementing PBL is a crucial factor. Not all teachers have experience in guiding students through problem-based projects. Therefore, some schools have started offering specialized training to improve teachers' understanding of this method. The principal of one high school mentioned that they were designing an intensive training program to better prepare teachers for implementing PBL in their classrooms.

The research findings suggest that the implementation of Project-Based Learning in Bojonegoro senior high schools has brought positive changes to the learning process. This model not only enhances students' understanding of academic material but also helps them develop essential 21st-century skills needed in the workforce and daily life. Challenges such as time constraints and teacher readiness still need to be addressed for more optimal PBL implementation. School support in the form of teacher training and curriculum flexibility is essential to ensure the sustainability of this innovative learning method.

Teacher Training for 21st-Century Skill Development

Research findings obtained from documentation, interviews, and observations indicate that several senior high schools in Bojonegoro have organized various training programs for teachers to enhance their competence in teaching 21st-century skills. These training programs cover technology-based learning methods, alternative assessment strategies, and more interactive and collaborative teaching techniques.

Based on documentation collected from various schools, several types of training have been provided to teachers. One of the most frequently held training sessions is the use of technology in learning. Teachers were trained to utilize digital platforms such as Google Classroom, Zoom, and interactive learning applications like Kahoot and Quizizz. The goal of this training was to enable teachers to integrate technology effectively into the learning process, making students more engaged and providing them with wider access to learning materials.

Training focused on alternative assessment strategies that emphasize skill-based evaluation. Teachers were introduced to various evaluation methods that not only

assess students' academic understanding but also measure critical thinking, creativity, communication, and collaboration skills. Some of the strategies taught included peer assessment, digital portfolios, and competency-based projects.

Interactive and collaborative teaching techniques were also a crucial part of teacher training. According to an interview with a school principal, these training sessions aimed to help teachers create a more engaging and dynamic learning environment. Some techniques covered in the training included problem-based discussions, simulations, and educational games designed to enhance student engagement in learning.

Observations revealed that most teachers participated enthusiastically in these training programs. They recognized the importance of 21st-century skills and their application in preparing students for future challenges. Several teachers interviewed mentioned that after attending the training, they felt more confident in teaching using innovative approaches.

A Mathematics teacher stated that he began implementing project-based learning methods after completing the training. *"I used to rely more on lectures, but after the training, I started giving students challenges to solve real-world problems through projects. As a result, students became more interested and active in learning,"* he said.

Documentation collected from various sources also showed increased creativity in lesson planning following the training. Many teachers began using more diverse learning media, such as interactive videos, digital simulations, and technology-based experiments to support students' understanding of taught concepts.

Despite the significant benefits of these training programs, interviews with several teachers indicated challenges in applying the training in classrooms. One major challenge is time constraints. Many teachers feel that their heavy teaching loads make it difficult to implement the new methods they learned during training. *"We want to apply all the strategies taught, but sometimes classroom time is very limited. A packed curriculum forces us to rush through the material,"* said an Indonesian language teacher.

Limited resources are another significant challenge. Some schools lack adequate infrastructure to support technology-based learning. A teacher in a rural school mentioned that unstable internet connectivity and limited technological devices at school hinder the full adoption of digital learning methods. *"We want to use LMS and interactive applications, but the school's internet access is still limited, making implementation difficult,"* he explained.

Some teachers also expressed the need for ongoing training to continuously develop their skills. A school principal suggested that training should not only be

conducted formally through seminars or workshops but also through professional learning communities (PLCs). With these communities, teachers could continuously discuss and share experiences in applying innovative teaching methods.

Teacher training for 21st-century skill development in Bojonegoro senior high schools has positively impacted teachers' competence in adopting more innovative and technology-based teaching approaches. However, challenges such as time constraints, limited resources, and inadequate infrastructure still need to be addressed. To ensure the sustainability and effectiveness of these training programs, schools need to provide better support, including more flexible time allocation, improved facilities, and the development of professional learning communities for teachers.

Challenges in Implementing an Innovative Curriculum

Research findings obtained through observations, interviews, and documentation indicate that although various senior high schools (SMA) in Bojonegoro have started adapting an innovative curriculum to improve the quality of education, several challenges hinder its effective implementation. These challenges include limited supporting facilities, resistance from teachers and students, and difficulties in adapting new teaching methods to real classroom conditions.

Based on observations in several schools, one of the main obstacles in implementing an innovative curriculum is the lack of technological infrastructure and stable internet access. Some schools, especially those in remote areas, still struggle to provide adequate technological devices to support digital-based learning methods.

One principal interviewed stated, *"We have made efforts to provide computer laboratories and internet access, but budget constraints prevent us from fully meeting all technological needs. Students who do not own personal devices such as laptops or smartphones also find it difficult to participate in technology-based learning."*

Documentation collected from various schools shows that although some institutions have adopted Learning Management Systems (LMS) and interactive learning applications, their utilization remains limited due to the lack of training for teachers and students on how to maximize the use of these technologies.

Beyond facility limitations, interviews with several teachers revealed ongoing resistance to the new teaching methods introduced in the innovative curriculum. Some teachers find it difficult to abandon conventional teaching methods they have used for years.

A senior teacher shared, *"I am used to lecturing and giving practice questions to students. Now, we are required to use more project-based learning and interactive discussions. Honestly, this is quite challenging because we have to adapt to a new teaching style while also handling an increasing administrative workload."*

From the students' perspective, interview results indicate that some also struggle to adapt to more active and collaborative learning methods. Many students, who are accustomed to passive learning methods such as listening to teacher lectures and taking notes, feel uncomfortable when required to participate in group discussions and problem-based projects.

An 11th-grade student expressed, *"I feel more comfortable learning by listening to the teacher's explanations and doing practice questions. When asked to work in groups and create projects, I lack confidence and fear making mistakes."*

Documentation from various schools suggests that the implementation of an innovative curriculum often needs to be adjusted according to each school's specific conditions. Some schools face difficulties in aligning the new curriculum standards with their local needs and student characteristics.

An academic affairs vice principal stated, *"The innovative curriculum is great for enhancing 21st-century skills, but in practice, we have to make many adjustments to suit our students' conditions. Not all students are ready to learn with these new methods, so we need to find ways to implement the curriculum more effectively."*

Several teachers also noted that differences in student readiness for innovative learning methods present an additional challenge. Students with high learning motivation tend to adapt more quickly, whereas less active students often struggle to keep up with the changes in teaching methods.

The challenges in implementing an innovative curriculum in senior high schools in Bojonegoro include limited supporting infrastructure, resistance from teachers and students to new learning methods, and difficulties in adapting the curriculum to school conditions. To address these challenges, greater support is needed in providing technological facilities, intensive training for teachers, and more flexible learning strategies that can be effectively applied according to the needs of each school.

DISCUSSION

The findings of this study indicate that the adaptation of an innovative curriculum in high schools in Bojonegoro has been implemented through technology integration, the application of Project-Based Learning (PBL), and teacher competency enhancement. These findings align with previous research, which asserts that integrating technology and active learning approaches can improve students' 21st-century skills(Veletsianos dkk., 2021). This adaptation is a response to the evolving times, where students are required to develop skills relevant to global challenges.

One of the key elements in adapting an innovative curriculum is the integration of technology in the learning process. The use of technology allows students to have broader access to learning resources and develop digital skills relevant to the Industry

4.0 era. Technologies such as Learning Management Systems (LMS), interactive software, and online learning media have enhanced students' learning experiences. However, the effectiveness of technology use largely depends on the readiness of infrastructure and the digital literacy of both teachers and students (Sholeh, 2023). Some schools in Bojonegoro still face challenges related to stable internet access and the availability of adequate technological devices. Therefore, schools must ensure sufficient support in the form of technology training for educators and the provision of facilities that support digital-based learning.

In addition to technology integration, the implementation of Project-Based Learning (PBL) is also an effective approach to enhancing students' critical thinking and problem-solving skills. This model provides a deeper learning experience as students are directly involved in exploring concepts through real-world projects (Sari, 2024). Through PBL, students are encouraged to work in groups, solve applied challenges, and develop their creativity. Several interviewed teachers stated that PBL has had a positive impact on increasing student participation in class. Implementing PBL still faces challenges, particularly in terms of time management and teacher preparedness in guiding students. Teachers often feel that this method requires more complex planning and longer instructional time compared to conventional methods. To address these challenges, more intensive training for teachers is needed to better prepare them for PBL implementation, along with more flexible time allocation in the curriculum to allow students to complete projects optimally.

Teacher training is one of the key factors in the successful adaptation of an innovative curriculum. Teachers who receive adequate training are better equipped to implement teaching strategies that align with 21st-century skills. Effective training programs include the introduction of educational technology, active learning methods, and inquiry- and collaboration-based approaches(Syafi'i & Ikwandi, 2023). However, a major challenge is the limited time teachers have to participate in regular training. Teaching responsibilities and administrative demands often become the main barriers to teacher professional development. Therefore, a community-based training model, such as a Professional Learning Community (PLC), can be a solution to continuously enhance teacher competencies. PLCs allow teachers to share experiences and learning strategies with their peers, making professional development not solely dependent on formal training but also occurring organically in the daily work environment.

The primary obstacles in implementing an innovative curriculum are the lack of supporting facilities and resistance to change. Some schools still struggle with limited access to computer labs, stable internet connections, and interactive learning devices. Additionally, not all teachers and students are ready to adapt to new learning methods.

The findings of this study align with Rogers' (1995) diffusion of innovations theory, which states that adopting change in educational institutions often faces barriers due to cultural factors, individual readiness, and resource constraints(Ma dkk., 2024). In this study's context, some teachers expressed skepticism about the effectiveness of technology- and project-based learning approaches. They feel more comfortable with traditional teaching methods that have been used for a long time. Therefore, it is crucial for schools to implement effective change management strategies, including more intensive socialization efforts and increased technical support for teachers and students to help them adapt well to the implemented innovations.

From an educational policy perspective, local governments play a crucial role in supporting the implementation of innovative curricula in high schools in Bojonegoro. Policies that encourage the use of technology in education and adequate budget allocation for educational infrastructure procurement are essential for ensuring the smooth implementation of learning innovations. Additionally, partnerships between schools, industry, and higher education institutions can help provide students with more practical 21st-century skills training(Habibulloh dkk., 2024). For instance, collaboration with technology companies can open opportunities for students to gain industry-based learning experiences, while partnerships with universities can enrich learning resources and research opportunities for schools.

This study confirms that the adaptation of an innovative curriculum in high schools in Bojonegoro has had a positive impact on the learning process, although various challenges still need to be addressed. The success of this curriculum implementation greatly depends on schools' commitment to providing adequate support, whether in the form of teacher training, technological infrastructure, or flexible policies to accommodate 21st-century learning needs. With the right strategies, adapting an innovative curriculum will not only improve students' academic skills but also equip them with competencies relevant to navigating an increasingly complex and dynamic future(Minarti dkk., 2024).

Further research is needed to evaluate the long-term effectiveness of this innovative curriculum adaptation. Future studies could examine how these changes affect students' learning outcomes over an extended period and how graduates from schools implementing innovative curricula adapt to the workforce and higher education. With a more comprehensive understanding, better educational policies can be designed to ensure that the implemented curriculum truly provides optimal benefits for future generations.

CONCLUSION

Based on the research findings, it can be concluded that the adaptation of an innovative curriculum in high schools in Bojonegoro has been implemented through various strategies, such as the integration of technology in learning, the application of project-based learning models, and the enhancement of teacher competence through 21st-century skill training. These efforts aim to create a more interactive, collaborative, and relevant learning environment in line with modern developments. Several challenges remain in its implementation. The main obstacle to optimizing digital-based learning is the limited infrastructure, particularly in terms of technology and internet access. Additionally, teacher readiness is a crucial factor, as some educators still struggle to adopt more innovative teaching methods. Resistance to change among teachers and students also poses a challenge, as many are still accustomed to conventional, passive learning methods.

To ensure the sustainability of this curriculum adaptation, support from various stakeholders—including the government, schools, and the community—is essential. The government needs to improve access to modern educational facilities, while schools must provide more systematic training for teachers to help them implement new teaching methods effectively. Furthermore, community involvement, including that of parents, plays a vital role in supporting this adaptation process for better outcomes. This study provides valuable insights for education policymakers in designing more effective strategies for adapting innovative curricula at the high school level. Future research is recommended to explore the long-term impact of this curriculum implementation on student learning outcomes and their readiness to face global challenges in the future.

REFRENCES

Adiele, E. E., & Abraham, Nath. M. (2013). Achievement of Abraham Maslow's Needs Hierarchy Theory among Teachers: Implications for Human Resource Management in The Secondary School System in Rivers State. *Journal of Curriculum and Teaching*, *2*(1), p140. https://doi.org/10.5430/jct.v2n1p140

Andriani, L. (2023). Evaluation Of The Project Based Learning Model As The Implementation Of The Independent Learning Curriculum. *International Journal of Current Economics & Business Ventures*, *3*(2).

Creswell, J. W., & Clark, V. P. (2007). *Mixed methods research.* Thousand Oaks, CA.

Habibulloh, M., Sholeh, M. I., & Idawati, K. (2024). Exploring Technological Innovations and Approaches in Modern Education. *SAHRI: Journal of Studies in Academic, Humanities, Research, and Innovation*, *1*(1), 49–66.

Heryahya, A., Herawati, E. S. B., Susandi, A. D., & Zulaiha, F. (2022). Analisis Kesiapan Guru Sekolah Dasar dalam Implementasi Kurikulum Merdeka. *Journal of Education and Instruction (JOEAI)*, *5*(2), 548–562. https://doi.org/10.31539/joeai.v5i2.4826

Liu, H., Spector, J. M., & Ikle, M. (2018). Computer technologies for model-based collaborative learning: A research-based approach with initial findings. *Computer Applications in Engineering Education*, *26*(5), 1383–1392. https://doi.org/10.1002/cae.22049

Ma, X. Z., Ertmer, P. A., & Pelgrumen, C. P. (2024). The Impact of Technology Integration on Student Learning Outcomes. *JTL: Journal of Teaching and Learning*, *1*(1), 73–90.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook*. Sage Publications.

Minarti, S., Ma'arif, M. J., Manshur, A., 'Azah, N., Sholeh, M. I., & Sahri, S. (2024). The Influence Of Teacher Training And The Use Of Educational Technology On The Effectiveness Of Islamic Education Learning At Man 1 Bojonegoro. *Educational Administration: Theory and Practice*, *30*(4), 64–75. https://doi.org/10.53555/kuey.v30i4.1404

Pawar, S., & Dhumal, V. (2024). The role of technology in transforming leadership management practices. *Multidisciplinary Reviews*, *7*(4), 2024066. https://doi.org/10.31893/multirev.2024066

Sari. (2024). Penerapan P5 Project Based Learning pada Pendidikan Anak Usia Dini. *PrimEarly : Jurnal Kajian Pendidikan Dasar dan Anak Usia Dini*, *7*(2).

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. Teachers College. Coloumbia University.

Sholeh, M. I. (2023). Strategi Manajemen Organisasi Pendidikan Islam dalam Menghadapi Tantangan Global. *Edu Journal Innovation in Learning and Education*, *1*(1), 1–27. https://doi.org/10.55352/edu.v1i1.456

Sholeh, M. I., Lestari, A., Erningsih, E., Yasin, F., Saleh, F., Suhartawan, V. V., Pattiasina, P. J., Widya, A., Sampe, F., Fadilah, N. N., & others. (2024). *Manajemen Kurikulum*. CV. Gita Lentera. https://books.google.co.id/books?id=Ql8FEQAAQBAJ

Sleeter, C. (2018). A framework to improve teaching in multicultural contexts. *Education & Self Development*, *13*(1), 43–54. https://doi.org/10.26907/esd13.1.05

Susanti, R., Rohman, M., & Hayati, R. M. (2024). Analysis of Qur'an Tahfidz House (RTQ) Management at Rumah Tahfidz Center Lampung. *Jurnal Ilmiah Iqra'*, *18*(1), 97. https://doi.org/10.30984/jii.v18i1.3083

Syafi'i, K., & Ikwandi, M. R. (2023). Strategi Kepala Sekolah Dalam Meningkatkan Mutu Pendidikan Melalui Program Unggulan di SMK Kiyai Mojo Tembelang Jombang. *JMPI: Jurnal Manajemen, Pendidikan, dan Pemikiran Islam*, *1*(2).

Veletsianos, Dr. G., VanLeeuwen, Dr. C. A., Belikov, O., & Johnson, Dr. N. (2021). An Analysis of Digital Education in Canada in 2017-2019. *The International Review*

of Research in Open and Distributed Learning, *22*(2), 102–117. https://doi.org/10.19173/irrodl.v22i2.5108