

The Management of Curriculum Innovation to Improve Student Learning Outcomes at the Zam-Zam Muhammadiyah Senior High Boarding School

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ABSTRACT

Curriculum innovation management for one of the things that is very important in realizing a generation that has academic intelligence and also has 21st century competencies and is able to compete globally is education. To achieve the expected learning outcomes, systematic planning is needed through educational innovation. This study examines in depth the management of curriculum innovation in improving student learning outcomes at Zam-Zam Muhammadiyah Senior High Boarding School. The curriculum as a guide in the implementation of education requires innovation to be relevant to the needs of students and changing times. This research was conducted with a qualitative approach and used a descriptive approach. The techniques for collecting data were in-depth interviews, participant observation, and documentation, with participants consisting of curriculum staff, teachers, and students. The findings of this study reveal that the curriculum innovation management of Zam-Zam Muhammadiyah Senior High Boarding School plays an important role in improving student learning outcomes, which is indicated by the increase in student grades, character development, student learning skills, and the development of 21st-century skills. The results of this study further emphasize the importance of curriculum innovation as a management strategy to improve educational effectiveness.

INTRODUCTION

One of the most important things in shaping a quality generation is education. Husnalia et al (Widiastuti & Hanif, 2024) stated that education is a form of long-term investment that is the initial foundation for the growth and progress of a country (ASTUTI & HANIF, 2024; Nugroho & Hanif, 2024a). In the digital era, education is required to be able to realize students who have academic intelligence and also have the abilities needed in the 21st century, including critical and creative thinking, the ability to work together, and communication skills. 21st-century competencies such as critical thinking, creative, collaborative, and communicative (Humam & Hanif, 2025; Mr & Hanif, 2024). Of course, these competencies are not formed just like that, but must be planned systematically by carrying out various educational innovations. Innovation in education is implemented as a step to optimize learning achievement (Rahayuningsih & Hanif, 2024; Turohmah & Hanif, 2024). In educational innovation, adequate human resources are needed, both teachers who have excellence, creativity, and innovation, who can create an inspiring and competitive learning environment, and can apply interesting and challenging learning models, thus, learning activities become more interesting and efficient for students (Sukmawardana & Hanif, 2024; Yustitia et al., 2024).

Zam-Zam Muhammadiyah Senior High Boarding School, as one of the pesantren-based educational institutions, always strives to answer these challenges by carrying out management of curriculum innovation (Arromal & Hanif, 2024; Syafi'ah & Hanif, 2024a). The curriculum has a position that plays a significant role in the world of education because it functions as the main guideline in the learning process, so in its application there needs to be innovation to update learning methods, teaching materials, and educational systems that are adaptive and relevant to the times to improve the academic achievements of students who have abilities and skills comparable to the demands of the (Hidayah & Hanif, 2024; Mashum & Hanif, 2024). Innovation is also carried out to optimize the quality of effective, efficient, and more adaptive learning to changing times (Esti Rahayuningsih & Hanif, 2024; Nugroho & Hanif, 2024a).

Education in Law No. 20 of 2003 concerning the National Education System is defined as "a conscious and planned effort to create a learning environment and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, the community, the nation, and the state." (*Undang-Undang Republik Indonesia Nomor 20 Tahun 2003*, 2003) Ki Hajar Dewantara defines education as "a requirement in the growth of children, the purpose of which is to guide all the natural strengths that exist in children so that they, as human beings and as members of society, can achieve the highest possible safety and happiness" (Pristiwanti et al., 2022). In accordance with Law No. 20 of 2003 on the National Education System, Article 3, education is carried out to achieve the goal of "developing the potential of students to become individuals who are faithful and devout to God Almighty, have noble character, are healthy, knowledgeable, skilled, creative, independent, and become democratic and responsible citizens" (Pristiwanti et al., 2022). To conduct optimal and effective learning, there needs to be educational innovation management and cooperation from all school parties.

According to Milles (Haq et al., 2023), innovation steps in education can be done by forming an innovation design, building awareness of the innovation goals, designing evaluation implementation, and conducting evaluation trials. One form of renewal in the world of education is curriculum development, which is an effort to renew the curriculum by introducing new elements to address various issues in the field of education (Septermiarti et al., 2023).

In this era of globalization and rapid technological advancement, schools are required to play a role as a place for transferring knowledge and also as a center for developing students' character, creativity, and competitiveness. Schools are also capable of providing educational services that are not only of high quality but also aligned with the evolving demands of the job market. (Mahfud & Hanif, 2025) Curriculum innovation management has become a strategic necessity for schools to address the challenges of modern education. A curriculum managed with an innovative approach enables schools to design more contextual learning, emphasize competencies, and respond to social and economic changes. Without innovation in curriculum management, the learning system risks failing to prepare graduates who meet the needs of the times. Thus, the curriculum system is not only the foundation for producing a generation of learners with strong character and adaptability in various situations. However, the curriculum serves as a platform to integrate digital competencies with critical thinking, creativity, and innovation skills. (Nurjanah et al., 2024)

In this era of globalization and rapid technological advancement, schools are required to play a role as a place for transferring knowledge and also as a center for developing students' character, creativity, and competitiveness. Schools are also capable of providing educational services that are not only of high quality but also aligned with the evolving demands of the job market (Hidayatun & Hanif, 2024; Mahfud & Hanif, 2025). Curriculum innovation management has become a strategic necessity for schools to address the challenges of modern education. A curriculum managed with an innovative approach enables schools to design more contextual learning, emphasize competencies, and respond to social and economic changes (Arromal & Hanif, 2024; Syafi'ah & Hanif, 2024a). Without innovation in curriculum management, the learning system risks failing to prepare graduates who meet the needs of the times. Thus, the curriculum system is not only the foundation for producing a generation of learners with strong character and adaptability in various situations. However, the curriculum serves as a platform to integrate digital competencies with critical thinking, creativity, and innovation skills (Mr & Hanif, 2024; Turohmah & Hanif, 2024).

This study was conducted to explain the curriculum innovation management implemented at Zam-Zam Muhammadiyah Senior High Boarding School. The researcher analyzed how curriculum innovation resulted in improved learning outcomes for students at Zam-Zam Muhammadiyah Senior High Boarding School. It is hoped that the findings will provide recommendations for the development of curriculum innovation management so that Zam-Zam Muhammadiyah Senior High Boarding School can improve the learning outcomes of its students who possess 21st-century intelligence and competencies. Curriculum innovation management at Zam-Zam

Muhammadiyah Senior High Boarding School plays an important role in improving student learning outcomes. The implementation of curriculum innovation has a positive impact on improving student grades, character development, learning skills, and the development of 21st-century competencies.

THEORETICAL REVIEW

The Concept of Educational Management

The word “management” comes from the word “manus,” meaning “hand,” which refers to the process of managing, organizing, and adjusting something with the optimal use of all available resources to achieve the desired goals (Fardiansyah, 2022). Stoner, as cited in Sumidjo & Soebedjo, defines management as a set of steps or processes comprising planning, organizing, executing, and supervising activities to manage and empower human resources and facilities most effectively and appropriately to achieve predetermined objectives (Haq et al., 2023). It can be concluded that management is a series of actions taken to plan, organize, and control in managing human resources and facilities effectively so that the desired targets can be achieved.

According to Husaini Usman in (Machali, I. Hamid, 2017), educational management is “the art and science of managing educational resources to create a learning environment and learning process that enables students to actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, the nation, and the state.” Educational management is implemented to manage existing resources to achieve the desired educational goals.

Curriculum Innovation Concept

Innovation can be defined as an idea or concept, product or object, method, process, or technology that is perceived as new by an individual, where the element of novelty is relative (Rachmad et al., 2022). An idea, product, technique, procedure, or technology is considered an innovation if it is deemed new by someone. Meanwhile, curriculum can be understood from an etymological and terminological perspective. From an etymological perspective, the word curriculum originates from the Greek words “curir” and “currere,” which refer to the route or path that participants must follow when participating in a race. The word “currere” was later transformed into the noun “curriculum,” which means: “fast running, racing, horse racing, horseback riding, walking, a journey, an experience without stopping, a racecourse, an arena, a path, and curriculum is also defined as the distance a runner must cover from start to finish to earn a medal/award” (Usdarisman, 2024).

Terminologically, Law No. 20 of 2003 concerning the National Education System regulates the curriculum, which means “a set of plans and arrangements regarding the objectives, content, and subject matter, as well as the methods used as guidelines for conducting learning activities to achieve specific educational goals.” (*Undang-Undang Republik Indonesia Nomor 20 Tahun 2003*, 2003) The curriculum can be understood as a set of knowledge conveyed by teachers to students during their education. (Khasanah, 2022) According to Ronald C. Doll

in (Usdarisman, 2024), “the school curriculum is the content of the process, both formal and informal, intended for students to acquire knowledge and understanding, develop skills, and change their attitudes and values with the help of the school.” It can be concluded that the curriculum is a guide, a roadmap for a comprehensive educational process, guiding students to achieve the expected learning outcomes. The curriculum, as the “heart of education,” plays a crucial role in determining the path and standards of education (Esti Rahayuningsih & Hanif, 2024).

The implementation of the curriculum must be adapted to changes in the times and capable of adapting to the evolving needs of society, so that it can respond to challenges and not fall behind in keeping pace with advancements in science and technology (Syafi’ah & Hanif, 2024b). To develop innovation in the educational curriculum, it can be done by implementing innovations according to needs. Curriculum innovation can be defined as the development of new ideas, thoughts, or actions in the field of curriculum aimed at addressing various issues in the world of education (Sabdarifanti et al., 2021). Curriculum innovation is also defined as an effort to renew the field of curriculum by introducing new elements to address various issues in the world of education (Septermiarti et al., 2023). From the above explanation, it can be concluded that curriculum innovation management is a structured method that includes the stages of planning, organizing, directing, and controlling changes and updates to the curriculum in order to improve the relevance and quality of education. Curriculum development also needs to take into account changes and developments in society (Kurniati et al., 2022). Therefore, the education curriculum must be flexible, adaptive, and not rigid to keep up with the times.

In curriculum innovation, its development is influenced by factors such as 1) advancements in information technology, particularly digital technology, which provide educators with greater opportunities to access a wider range of diverse and innovative learning resources, as well as the use of more flexible teaching methods (Hanif, Qudsiyyah, et al., 2025) the need to improve the quality of education, where the curriculum must be able to develop students' skills in line with the changing times. Currently, in the era of globalization, the curriculum must be able to develop 21st-century skills in students so that they are ready to face the future. These skills are 1) critical thinking, 2) good communication, and emotional intelligence (Hanif, Junaidi, et al., 2025; Humam & Hanif, 2025) and 3) the relevance of the curriculum to community demands, where changes in community demands and parents' expectations of education mean that the curriculum must be relevant to these demands. The curriculum should include the development of non-academic competencies, such as technical skills and soft skills. Additionally, the demand for higher-quality education has prompted educational institutions to continuously innovate in developing curriculum content or teaching (All et al., 2024; Hidayatun & Hanif, 2024)

Curriculum Innovation Management Concept

Dinn (Mariam & Sukirman, 2021) explains that curriculum management is a holistic and integrative education management system at the educational unit level, which serves as an operational foundation for the implementation of learning to achieve national educational goals, plays a strategic role in facilitating students to optimize their potential and competencies, and provides systematic support to educators in carrying out their professional roles. Curriculum management can also be defined as a branch of science that focuses on the design, development, implementation, and evaluation of curriculum in an educational institution. (Lukmantya, 2023)

The Concept of Learning Outcomes

Learning is one of the crucial aspects in the implementation of education because the learning process undergone by students at a school will determine the achievement of their learning outcomes. According to Tohirin, learning outcomes are “what students have achieved after engaging in learning activities.” According to Hamdan and Khader (Motoh et al., 2022), learning outcomes serve as the main basis for evaluating and reporting student academic achievement, while acting as a key element in designing a more effective learning process. It can be concluded that learning outcomes are concrete indicators of student achievement after undergoing the learning process. Learning outcomes also serve as an important foundation for designing more purposeful and effective learning, emphasizing the alignment between learning objectives, processes, and assessment systems (Hidayah & Hanif, 2024; Mashum & Hanif, 2024).

Many factors can influence student learning achievement, such as: (Prastiwi et al., 2023)

1. Internal factors (factors originating from within): these factors originate from the students themselves. These factors consist of physical conditions (body), which include physical health, and mental conditions (mind), which include student intelligence level, student attitude, student skills or talents, and motivation. Motivation can also be defined as “an effort to increase or initiate movement to achieve a specific goal” (Fernando et al., 2024)
2. External factors (factors outside the student): external factors that can affect student learning outcomes include community factors, school factors, family factors, and learning factors. (Prastiwi et al., 2023)

Bloom said that the development of students' abilities as a result of learning can be seen in three areas such as psychomotor, affective, and cognitive. (Ulfah. & Arifudin, 2021)

Cognitive domain (intellectual ability development): This refers to students' ability to understand an event in the teaching and learning process. According to the research findings of Zakiah & Khairi (Ulfah. & Arifudin, 2021), cognitive refers to mental activities related to the ability to recognize something in general, as reflected through an individual's mental representation of an object, whether in the form of symbols, perceptions, ideas, or concepts, as well as values and considerations. Meanwhile, according to Noviansyah, cognitive is the field related to aspects of intelligence or logical thinking abilities, which include

understanding, application, analysis, guidance, and evaluation. (Ulfah. & Arifudin, 2021)

1. Affective domain (development of attitude skills)

The affective domain is related to a person's attitude, character, behavior, feelings, and principles. According to Hidayatullah (Ulfah. & Arifudin, 2021), attitudes and principles are related to the affective domain. Meanwhile, according to Saftari & Fajriah in (Ulfah. & Arifudin, 2021), affective abilities correlate with a person's interests and attitudes that form a sense of responsibility, ability to work together, discipline, commitment, self-confidence, honesty, respect for other people's opinions, and self-control. Affective abilities can be developed through learning and social interaction in the environment where individuals are, so that they are able to adapt to the values and rules that apply. (Nugroho & Hanif, 2024b)

2. Psychomotor domain (development of skills and abilities)

The psychomotor domain is the development of individual skills. Nadeak in (Ulfah. & Arifudin, 2021) explains that skills are an individual's expertise in performing a task or group of tasks. According to Utama (Ulfah. & Arifudin, 2021), the psychomotor domain encompasses how muscles and the nervous system function, as it is related to skill elements.

Assessment of Learning Outcomes

Student learning outcomes can be evaluated using evaluation instruments. In general, evaluation instruments can be divided into two types: tests and non-tests. Evaluation instruments can be used to determine student progress in the learning process. (Prastiwi et al., 2023)

METHODOLOGY

This study was conducted at Zam-Zam Muhammadiyah Senior High Boarding School, located in Pernasidi Village, Cilongok District. The research object is a boarding school oriented toward character development and 21st-century skills. The focus of this study is on the policies, strategies, and implementation of curriculum innovations carried out by the school as an effort to improve the quality of education. Effective strategies are needed to ensure that education can deliver maximum results and benefits. (Arromal & Hanif, 2024) The research scale is institutional, covering curriculum management aspects, its implementation in the teaching-learning process, and its impact on student learning outcomes.

The primary data in this investigation were obtained from in-depth interviews with curriculum staff, teachers, and students at Zam-Zam Muhammadiyah Boarding School. Meanwhile, additional data found in this study were collected using various school documents and archives, such as curriculum planning and development documents, teacher teaching modules, student learning outcome reports, and school policies and internal evaluations related to the curriculum. The research subjects were selected purposively according to the characteristics of the study, namely, curriculum staff, teachers, and students. Participant selection was conducted using purposive sampling,

which involves selecting individuals who have direct roles and in-depth knowledge related to the identified subject.

The source of this research is the researcher himself as a human instrument responsible for designing, collecting, and analyzing data directly. The researcher is equipped with supporting instruments, namely: 1) interview guides for curriculum staff, teachers, and students, 2) observation forms to monitor the teaching and learning process and curriculum activities, and documentation formats to record relevant documents and archives. These instruments were developed under conditions in the field.

This research was conducted in several stages, the initial stage being the preparation stage and the submission of a research permit to the school to conduct the research. The second stage was data collection, which included interviews with curriculum staff, teachers, and students, as well as the collection of documents related to curriculum innovation and learning outcomes. The third stage was data analysis, which was carried out by categorizing and interpreting the information obtained through observation, documentation, and interviews. The final stage was the preparation of a research report that included findings and recommendations.

This study utilized various data collection methods, including in-depth interviews with curriculum staff, teachers, and students, to obtain an overview of the implementation of curriculum innovation on learning outcomes at Zam-Zam Muhammadiyah Boarding School. Observations were conducted by directly observing the implementation of curriculum innovation in classrooms and the school environment. Documentation was in the form of collecting and analyzing written documents relevant to curriculum management.

The collected data were examined qualitatively using the interaction model of Miles and Huberman. According to Saleh in (Qomaruddin & Sa'diyah, 2024), this involves three steps, namely data reduction, data presentation, and drawing conclusions and checking consistency. Data reduction is the stage of filtering and processing raw data into relevant and meaningful information in line with the research focus. Data presentation is the process of organizing data into narratives or written descriptions and tables to make patterns and relationships between data more easily visible. Meanwhile, drawing conclusions and verification is the process of formulating final interpretations based on field findings, and verifying them through data triangulation and member checks.

RESEARCH RESULTS

The curriculum innovation implemented by Zam-Zam Muhammadiyah Senior High Boarding School demonstrates the school's seriousness in managing education to improve student learning outcomes. The curriculum was designed in a joint meeting with the curriculum development team. This document was designed and developed based on the evaluation of the previous year's curriculum document. To meet the demands of the 21st century, Zam-Zam Muhammadiyah Senior High Boarding School has designed curriculum innovations focused on: 1) the integration and implementation of 21st-century skill development in learning activities, 2) the application and integration of character education based on the Pancasila Student Profile in the learning

process, and 3) the utilization of information technology in teaching and learning activities.

The implementation of curriculum innovation at Zam-Zam Muhammadiyah Senior High Boarding School can be seen from the results of observations and in-depth interviews with respondents consisting of curriculum staff, teachers, and students.

Table 1. Interview with Curriculum Staff at Zam-Zam Muhammadiyah Boarding School

Indicators	Answer
Curriculum planning	The curriculum is designed through curriculum development team meetings. Curriculum innovations include literacy movements, project-and problem-based learning, and character building.
Organization of curriculum implementation	There is a special team called TPKS (School Curriculum Development Team) that handles curriculum innovation.
Curriculum implementation	Strategies to encourage teachers to implement curriculum innovations through workshops and awards. Curriculum innovations are implemented with active learning and monitored through teacher supervision.
Curriculum supervision and evaluation	Evaluations are conducted through supervision by the principal. The success of innovations is measured by student learning outcomes, classroom participation, and projects.
Support and obstacles	The principal provides support in the form of motivation, facilities, training, and moral support. The main challenges are limited time and a lack of teacher competence.
Impact on learning outcomes	Good curriculum management improves student learning outcomes and encourages creativity and critical thinking. There is an improvement in students' cognitive, affective, and psychomotor aspects.
Expectations and recommendations	It is hoped that the curriculum will continue to evolve in line with students' needs. Recommendations include additional teacher training and periodic evaluation of curriculum implementation.

Based on the results of in-depth interviews conducted by the researcher with curriculum staff and observations of school curriculum documents, it was found that in implementing curriculum innovation, the principal is assisted by a

school curriculum team. This aligns with Syamsiyah's view in (Azzahra & Hanif, 2024) that “school principals must possess leadership competencies to ensure that the educational organization operates in line with the demands of the times.”

Curriculum innovation is implemented through learning activities. Teachers develop learning modules by applying learning models according to the standards used by the school, namely problem-based learning, project-based learning, cooperative learning, or discovery learning, while integrating character education and technology. In order for teachers to apply creative and innovative teaching methods, the school provides training through teacher quality improvement workshops and forms learning communities as a forum for discussion among teachers. In addition, the school also fulfills the needs of learning support facilities and infrastructure, such as science and social studies laboratories, computer laboratories, language laboratories, libraries, reading rooms, sports facilities, and places of worship. Furthermore, the school meets learning needs by providing classrooms that support learning, providing learning media such as LED TVs in classrooms, providing internet access for each building, and providing tablets to support learning. The efforts made by the school demonstrate how the principal plays a strong role in implementing curriculum innovations, which aligns with the view expressed by Nuriati et al. (Fauzi & Hanif, 2024) that the most effective and efficient approach to improving teacher performance is by providing adequate facilities and infrastructure.

Implementing curriculum innovation is certainly not an easy task. The main challenge faced by Zam-Zam Muhammadiyah Senior High Boarding School is that there are still teachers who do not fully understand how to implement innovative and creative teaching methods. Therefore, the school conducts regular monitoring of curriculum innovation implementation through teacher supervision activities and provides teacher training through workshops aimed at improving teacher quality. There is hope that in the future, curriculum innovation can be implemented more effectively in line with students' needs.

Table 2. Interviews with Subject Teachers at Zam-Zam Muhammadiyah Boarding School

Indicators	Answer
Implementation of learning	Teachers apply innovative methods such as PBL, PjBL, contextual learning, cooperative learning, and inquiry-based learning. Interactive learning is supported by technology (educational videos, computer labs, Canva applications, classroom TVs), although access is sometimes limited. Teachers engage students in real projects such as market observation.
Teacher-student interaction	Interaction is two-way through questions and answers, and discussion. The teacher is a facilitator, encouraging active participation, providing direction, and receiving student input.

Integration of 21st-century competencies	Integrated 21st-century competencies in project-based assessments, group reports, and presentations support those skills.
Learning facilities and infrastructure	Infrastructure facilities generally support curriculum innovation (computer lab, classroom TV, adequate classrooms for collaboration). However, these facilities need to be improved to support active learning.
Class conditions	Classrooms are considered to support active learning with facilities such as whiteboards, TVs, and comfortable chairs. Some teachers consider the facilities to be adequate but feel that improvements are needed for optimization.
Active student participation	Most students are active and enthusiastic about material about daily life. However, there is a challenge of how to stimulate student activeness due to tight schedules or other factors.
Critical thinking and problem-solving skills	There has been an improvement in critical thinking and problem-solving skills, although it is not always significant and varies among students.
Involvement in projects/PBL	Students are generally very enthusiastic and active in projects, observations, and research. But not all materials are suitable for the project method.
Cooperation and collaboration	Students actively work together on group assignments. Collaborative, interactive, and opinion-sharing attitudes are evident in most classes.
Average student scores (before/after curriculum innovation)	In general, there has been an increase in average scores, although this has not been consistent across all grades.
Quality of project assignments/authentic assessment	The majority of teachers cited better grades for project work. However, some students need to increase their responsibility and enthusiasm in group projects.
The trend of improving academic performance	There has been an increase in academic scores in some classes, but it has not been significant or has not covered all classes.

Based on in-depth interviews with teachers at Zam-Zam Muhammadiyah Boarding School and observations of teaching and learning activities in the classroom, it was found that all teachers have implemented innovative teaching techniques, such as problem-based learning, contextual learning, cooperative learning, and inquiry learning. Problem-based learning is one of the innovative teaching techniques mentioned by Robiyanto in (Rani & Mujiyanto, 2023). Learning has also implemented the use of technology and interactive learning

strategies that encourage student activeness. Some teachers stated that they have limited access to technology in learning, but they still integrate it by using educational videos, computer labs, Canva, and LED TVs in the classroom. This aligns with the opinion expressed by Asy'arie in (Fatoni, 2024), who states that the challenges faced by schools or madrasahs in conducting learning are the limitations in facilities and infrastructure.

However, respondents considered that school facilities and infrastructure support the implementation of curriculum innovations. During learning, there is a two-way interaction between teachers and students. The teacher functions as a guide, and students are encouraged to actively ask questions, discuss, and provide input. As stated by Mustofa Ali & Arif Muadzin, teachers are expected to play a role in providing the best services, including providing various facilities to support the smoothness and ease of the learning process for students (Mustofa & Muadzin, 2021). Students are trained to have 21st-century skills, including critical thinking, creativity, collaboration, and effective communication. This aligns with the mandate of the Merdeka Curriculum, which states that schools are expected to implement a learning system focused on character development, meaning that assessment is not limited to academic aspects alone but places greater emphasis on the character or personality of each student. (Cholilah et al., 2022) These 21st-century skills are reflected in the implementation of authentic assessment, group work, and presentations.

Most students are considered active in learning, although there are challenges in maintaining consistency. However, in general, they show high engagement in group projects and discussions. Teachers report that since the curriculum innovation, there has been an improvement in students' critical thinking and problem-solving skills. However, the improvement in academic scores has not been significantly distributed across classes, although positive trends are beginning to emerge.

Table 3. Interviews with students at Muhammadiyah Boarding School, Zam-Zam

Indicators	Answer
Understanding curriculum innovation	Students have noticed a change in the way they learn since the implementation of the Merdeka Curriculum. Initially, there was a decline in enthusiasm for learning, but this has since turned into greater enthusiasm.
Experience in the learning process	Generally, students find learning enjoyable, even though some subjects are challenging or boring. Teachers use a variety of methods such as group learning, discussions, projects, videos, and digital platforms. Students find the material easier to understand.

Student involvement and active participation	Students are asked to actively discuss, ask questions, and take quizzes, and are encouraged to think critically, creatively, and work together in group projects.
Impact on learning outcomes	Students felt that their grades had improved slightly, and their skills had increased, including critical thinking, cooperation, and use of technology. Students are more confident in learning.
Student character development	Learning emphasizes discipline and responsibility, such as submitting assignments on time. Students are taught discipline, responsibility, honesty, independence, respect for opinions, and the Pancasila learner profile. They feel more concerned about their friends and the environment.
Suggestions and expectations	Students hope that learning will be more enjoyable and efficient by listening to their wishes. They want teachers to avoid monotonous methods.

Based on the results of interviews with respondents from Zam-Zam Muhammadiyah Boarding School, it was found that respondents felt there had been changes in the learning system as a result of the implementation of the independent curriculum. Initially, there was a decline in learning motivation, but over time, the changes in the learning system have managed to reignite students' enthusiasm for learning. Teachers have employed various methods, such as discussions, group work, projects, the use of videos, and digital media to facilitate students' understanding of the material. In general, respondents feel that classroom learning is enjoyable and challenging, but there are some subjects that are considered boring.

However, respondents felt that they were often actively involved in learning through discussions, quizzes, and open-ended questions. They also felt that they were often asked to solve problems and work on collaborative projects that encouraged them to think critically and creatively. Respondents reported an increase in academic performance, though not significant, and felt greater improvement in the development of critical thinking skills, collaboration, and technology use. They also became more appreciative of others' opinions, more independent, disciplined, and responsible, particularly in task management. Respondents hoped that learning would be designed to be more enjoyable and less monotonous, taking into account students' needs..

From the results of in-depth interviews and observations conducted by researchers, it can be concluded that:

1. The implementation of curriculum innovation at SMA Muhammadiyah School Zam-Zam is the result of strong collaboration between the principal and the school's curriculum team. Curriculum innovation is implemented through learning activities designed to apply active learning that integrates 21st-century skills, character education values, and technology.

2. The school supports the implementation of curriculum innovation by facilitating the formation of learning communities and providing training, such as workshops for teachers. In addition, the school also meets the needs for learning support facilities and infrastructure.
3. The implementation of curriculum innovation at Zam-Zam Muhammadiyah Senior High Boarding School has been successful in most aspects, particularly in learning methods, technology integration in learning, and the achievement of 21st-century competencies. However, improvements are still needed in terms of more equitable access to technology, consistent student participation, and strengthening the overall evaluation of the curriculum's impact.
4. The implementation of curriculum innovation has a positive impact on improving grades, character development, student learning skills, and the development of 21st-century skills.

DISCUSSION

This study focuses on the implementation of curriculum innovation at Muhammadiyah Boarding School, Zam-Zam. The results show that curriculum innovation is implemented in a structured manner through collaboration between the principal and the curriculum team. In this case, curriculum innovation is not only about updating content and methods, but also includes human resource management, facilities, and learning strategies.

The implementation of curriculum innovation at Zam-Zam Muhammadiyah Senior High Boarding School is demonstrated by the application of active learning models such as Problem-Based Learning, Project-Based Learning, Cooperative Learning, and Discovery Learning. This aligns with the view expressed by Dewi Anggelia et al. that the Problem-Based Learning model is a student-centered learning approach that focuses on the learning process, giving students the freedom to express their ideas, which can then be realized in the form of projects, thereby encouraging students to be more creative in completing tasks. (Anggelia et al., 2022) Active learning models have proven effective in encouraging student engagement in developing 21st-century skills and improving the quality of the learning process. This aligns with the needs of students to face 21st-century education, where each individual is expected to possess four skills: critical thinking, creativity, communication, and collaboration. (Malikah & Wafroturrohmah, 2022)

The implementation of curriculum innovation is carried out by teachers by integrating technology into learning activities. This is an effort by the school to conduct adaptive and contextual learning in response to changes in the times. This aligns with the view expressed by Limbong et al. in (Agusniatih & R., 2022) that 21st-century learning is a form of education that combines mastery of knowledge, skills, and attitudes, while also incorporating the integrated use of technology. Curriculum innovation at Zam-Zam Muhammadiyah Senior High Boarding School has changed students' perceptions of learning, which was previously considered boring, into something more enjoyable and challenging. Students have become more active, confident, and have experienced

improvements in their grades, critical thinking skills, teamwork, and technology use.

However, this study revealed several challenges, such as some teachers not yet fully mastering innovative teaching techniques and lacking optimal access to technological facilities. These challenges indicate the need for continuous strengthening of teacher competencies through training and supervision. The implementation of teacher supervision is important to be carried out by the principal because it is in line with Sarimuna's opinion that the implementation of academic supervision in schools must be carried out seriously and continuously. Supervision carried out by school principals is expected to improve teachers' ability to conduct the learning process by established criteria. (Anam, 2021). Schools have responded to this by organizing teacher quality improvement workshops, forming learning communities, and conducting teacher supervision.

Overall, the findings in this study reinforce that curriculum innovation management at Zam-Zam Muhammadiyah Boarding School has had a real impact on improving student learning outcomes, both in terms of cognitive, affective, and psychomotor aspects. This aligns with the educational objectives outlined by B. S. Bloom, who stated that "educational objectives must always be grounded in the three domains inherent to learners, namely: the domain of thinking processes (cognitive), the domain of values or attitudes (affective), and the domain of skills (psychomotor)." (Salsabila et al., 2023) This finding also reinforces the relevance of educational management theory, which emphasizes the importance of strategic planning, institutional support, and continuous evaluation in the implementation of education. This is also relevant to the context of modern educational management according to Auguste Comte, as stated by Ngalu, that "the relevance of Comte's theory is not limited to one aspect of educational management but involves various dimensions such as scientific understanding, adaptation to social change, character and moral development, and the role of education in societal evolution." (Alfiandrizal et al., 2023) The success of curriculum innovation does not solely stem from the curriculum content itself but depends on how the curriculum is managed, including the readiness of human resources, supporting facilities, and a school culture that is adaptive to change.

CONCLUSION

Based on the results of the study, it can be concluded that curriculum innovation management at Zam-Zam Muhammadiyah Senior High Boarding School has been implemented in a structured and systematic manner. Curriculum innovation is implemented through learning activities that integrate active learning models, 21st-century skills, character education, and the use of technology.

The school also demonstrates a strong commitment to supporting curriculum innovation through the provision of adequate learning facilities and infrastructure, as well as ongoing teacher training. The implementation of curriculum innovation has had a positive impact on improving student learning

outcomes in cognitive, affective, and psychomotor aspects. Students have become more active, have high self-confidence, and have developed critical thinking, collaboration, and technology skills.

However, some challenges need to be addressed, such as the uneven mastery of innovative teaching methods among teachers and limited access to technology in some classrooms. Therefore, it is necessary to strengthen teacher competencies, conduct periodic evaluations, and encourage collaboration among all stakeholders to optimize the implementation of curriculum innovation.

For schools, there is a need to improve training activities to enhance teacher competence and ensure that technological learning facilities are accessible to all teachers so that curriculum innovations can be implemented optimally. For educators, it is hoped that they will continue to expand their competencies, innovate in teaching techniques, and be active in learning communities so that they are able to respond to the challenges of 21st-century education. For students: be more proactive in learning, be open to new approaches, and continue to develop 21st-century skills.

FURTHER STUDY

Building on the conclusions of this study, further research is recommended to explore the long-term effects of curriculum innovation on student achievement and personal development across different school contexts. Future studies could also examine the effectiveness of various teacher training models in enhancing the mastery of innovative teaching methods. Additionally, research on strategies to overcome technological disparities within classrooms would provide valuable insights for more equitable implementation. A comparative analysis involving schools with different resource levels could further enrich the understanding of best practices in curriculum innovation management in boarding school environments.

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