



The relationship between curriculum innovation and graduates' quality level

Ari Eka Setyaningrum^{1,*}, Ifada Novikasari²

¹ Department of Islamic Education Management, Postgraduate Program, Universitas Islam Negeri Profesor Kiai Haji Saifuddin Zuhri, Purwokerto, Central Java 53124, Indonesia;

² Department of Mathematics Education, Faculty of Tarbiyah and Teacher Training, Universitas Islam Negeri Profesor Kiai Haji Saifuddin Zuhri, Purwokerto, Central Java 53124, Indonesia.

*Correspondence: arisetyaningrum894@gmail.com

Received Date: June 26, 2025

Revised Date: May 22, 2026

Accepted Date: August 3, 2026

ABSTRACT

Background: Curriculum innovation plays an important role in improving the competence, adaptability, and competitiveness of graduates in response to changing educational and societal demands. This study examines the relationship between curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam. **Methods:** This study employed a quantitative correlational approach. The population consisted of 236 alumni from the 2024/2025 academic year. An initial sample of 70 respondents was determined using the Slovin formula with a 10% margin of error and random sampling. Following data screening, 30 complete and valid responses were retained for statistical analysis. Data were collected using a five-point Likert-scale questionnaire and analyzed through validity, reliability, normality, linearity, Pearson correlation, and simple linear regression tests. **Findings:** The results demonstrate a strong and statistically significant positive relationship between curriculum innovation and graduate quality. Pearson correlation analysis produced an r value of 0.707 ($p < 0.001$), while simple linear regression showed a significant effect of curriculum innovation on graduate quality ($F = 27.982$, $p < 0.001$). The coefficient of determination ($R^2 = 0.500$) indicates that curriculum innovation explains 50% of the variance in graduate quality. The regression coefficient was positive ($B = 0.854$), indicating that higher levels of curriculum innovation are associated with higher graduate quality. **Conclusion:** Curriculum innovation has a significant and substantial relationship with graduate quality at SMA Muhammadiyah Boarding School Zam-Zam. Sustainable curriculum development, technological integration, Islamic boarding school values, and strengthening of 21st-century competencies are important components in supporting graduate quality. **Novelty/Originality of this Article:** This study provides empirical evidence on the relationship between curriculum innovation and graduate quality within an integrated Islamic boarding school context, contributing to the limited literature examining curriculum innovation and graduate outcomes in this educational setting.

KEYWORDS: curriculum innovation; graduate quality; quantitative correlation.

1. Introduction

Education is an integral part of human life and has existed since the beginning of human civilization. As society and technology have developed, the concept and objectives of education have continued to evolve. In general, education can be understood as a process through which teachers transfer knowledge to students (Fajar et al., 2022). More comprehensively, Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System defines education as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have

Cite This Article:

Setyaningrum, A. E., & Novikasari, I. (2026). The relationship between curriculum innovation and graduates' quality level. *Islamic Perspective on Communication and Psychology*, 3(2), 119-137. <https://doi.org/10.61511/ipercop.v3i2.2026.2010>

Copyright: © 2026 by the authors. This article is distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).



spiritual religious strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, nation and state. Despite this legal mandate, the national education system continues to face complex challenges, including limited access to education, disparities in educational quality, curricula that are not yet fully responsive to current needs, and inequalities between regions. In the digital era, these challenges are further compounded by limitations in supporting facilities and resources, as well as differences in teachers' readiness and capacity to integrate digital technology into learning.

One important indicator of the success of an educational institution is the quality of its graduates (Syafar et al., 2024). In the digital era, educational institutions are expected not only to produce graduates with strong academic capabilities but also to develop 21st-century competencies that enable them to compete globally. This expectation represents an important challenge for SMA Muhammadiyah Boarding School Zam-Zam (a senior high school in Banyumas, Central Java) in developing graduates who are aligned with national education goals. To address this challenge, the school has implemented various educational innovations, particularly curriculum innovation. As a modern Islamic boarding school, SMA Muhammadiyah Boarding School Zam-Zam possesses several resources that provide a foundation for curriculum development, including: (1) teaching staff with backgrounds in both religious and general education; (2) an integrated learning environment; (3) religious educational facilities; (4) an integrated curriculum combining the national curriculum and Islamic boarding school curriculum; (5) a relatively independent school culture; (6) religiously oriented extracurricular activities; (7) support from the foundation; (8) alumni associations; and (9) cooperation with school and Islamic boarding school partners.

The curriculum occupies a crucial position in education because it serves as the primary framework for organizing teaching and learning processes. It provides direction for achieving educational objectives while also shaping the learning experiences students receive. As educational demands continue to change, curriculum innovation is necessary to update learning methods, teaching materials, and educational systems so that they remain adaptive and relevant to contemporary developments. Through appropriate curriculum planning and implementation, educational institutions can facilitate the development of graduates' competencies and skills in accordance with changing societal and global demands. Therefore, graduate quality is not produced automatically but requires systematic planning and continuous educational development. In this context, curriculum innovation becomes an important instrument for strengthening graduates' competitiveness and relevance in the global era.

The achievements of several graduates of SMA Muhammadiyah Boarding School Zam-Zam provide an initial indication of the school's capacity to produce competitive graduates. Some graduates have been admitted to leading domestic and foreign universities, while others have achieved success in national and international competitions. These achievements suggest that the graduates possess considerable academic capabilities and competitive potential. However, these achievements alone are not sufficient evidence to determine the effectiveness of the curriculum innovations implemented by SMA Muhammadiyah Boarding School Zam-Zam, as no empirical study has examined the extent to which curriculum innovation is associated with graduate quality at the institution.

Therefore, empirical research is needed to examine the correlation between curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam. Such research is relevant to the educational context because its findings may provide an empirical basis for evaluating and developing the school's curriculum. To address this objective, the present study employs a quantitative correlational approach to objectively and measurably examine the relationship between curriculum innovation and graduate quality.

1.1 Curriculum innovation

The term innovation originates from the English word innovation, which denotes renewal or change, while the verb innovo means to renew or transform. Thus, innovation

can be understood as an intentional and planned process of change aimed at improvement, resulting in something different from what previously existed rather than arising accidentally (Utomo, 2020). In the Big Indonesian Dictionary, innovation refers to introducing new things or renewal (Sugono, 2008). Rogers, as cited in Fatimah (2021), defines innovation as an idea, practice, or object an individual perceives as new. Rogers also emphasizes this definition in Septermiarti et al. (2023), who explain that an idea, practice, or object is considered an innovation when users perceive it as new. Therefore, not every change can be categorized as innovation, because innovation involves novelty and a deliberate effort to improve. New discoveries may be considered innovations when they emerge from original, creative, and unconventional thinking. From these perspectives, innovation can be understood as a deliberate, systematic process of change or renewal intended to produce something better and different from what previously existed.

The concept of curriculum can be understood from both etymological and terminological perspectives. Etymologically, the term curriculum comes from the Greek words *curir* and *currere*, which refer to a route or course that participants in a race must follow. The term later developed into the noun curriculum, referring to a race, journey, course, arena, or distance that must be traveled from the starting point to the finish line to achieve a particular goal or award (Usdarisman, 2024). From a terminological perspective, Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System defines curriculum as a set of plans and arrangements regarding the objectives, content, and learning materials and methods used as guidelines for organizing learning activities to achieve certain educational goals. Tabba, as cited in Mariam & Sukirman (2021), views the curriculum as a set of learning outcomes that guide educational processes. Similarly, the curriculum can be understood as a collection of learning experiences teachers provide to students throughout their educational period (Khasanah, 2022). Doll, as cited in Usdarisman (2024), further describes the school curriculum as the formal and informal content and processes the school provides to help students develop knowledge, understanding, skills, attitudes, and values. Based on these definitions, the curriculum can be understood as a comprehensive guide or roadmap that directs the educational process and helps students achieve the expected learning outcomes.

The curriculum is dynamic and must continuously respond to changes in social conditions, technological developments, and societal needs. Consequently, curriculum development cannot be separated from innovation, because educational institutions need to continually adapt their curricula to emerging challenges and expectations. Curriculum innovation refers to developing and implementing new ideas, concepts, or practices in curriculum design and implementation to address educational problems and improve learning quality (Sabdarifanti et al., 2021). Similarly, curriculum innovation can be understood as an effort to renew the curriculum by introducing new elements intended to overcome various challenges in education (Septermiarti et al., 2023). Curriculum innovation may involve changes in curriculum structure, learning materials, and the processes through which the curriculum is designed and implemented. Because its development is closely tied to societal dynamics and broader educational change, the curriculum must remain flexible, adaptive, and responsive to contemporary demands (Kurniati et al., 2022).

Several contextual factors influence the need for curriculum innovation. One of the most significant is the development of information technology, which provides educators with broader access to diverse and innovative learning resources while enabling more flexible approaches to teaching and learning. At the same time, the demand for improved educational quality requires curricula to develop competencies that correspond to changing social and global conditions. In the context of globalization and 21st-century demands, students are expected to develop competencies such as critical thinking, effective communication, creativity, collaboration, and emotional intelligence, in addition to academic knowledge (All et al., 2024). Curriculum innovation is also driven by changing societal demands and parental expectations, which require educational institutions to provide learning experiences that are relevant not only to academic achievement but also

to the development of technical competencies and soft skills. Therefore, educational institutions must continuously innovate curriculum content, learning approaches, and teaching methods in response to society's expectations for higher-quality, more relevant education (Murhayati Zalmi & Zalmi, as cited in All et al., 2024).

1.2 Graduate quality

Graduate quality does not develop automatically; it must be systematically planned and managed through a graduate quality improvement process (As'adiyah & Abdurrahman, 2024). In the Big Indonesian Dictionary, quality is defined as the measure of whether an object is good or bad, as well as its level, degree, or standard (Sugono, 2008). In education, graduate quality refers to the achievements students attain within a particular period of study. These achievements may include academic abilities, non-academic accomplishments, and other indicators of student development, such as discipline, cleanliness, mutual respect, and other positive behaviors (Rojak, 2022). Thus, graduate quality should not be understood solely in terms of academic achievement but as a broader reflection of the outcomes produced through the educational process.

Rohiat, as cited in Suwar & Azhar (2022), explains that educational quality encompasses three interconnected components: input, process, and output. Educational input refers to the resources and supporting elements required for the educational process, including human resources, facilities, infrastructure, and other supporting components. According to Yahya, educational input serves as an important foundation because it is subsequently processed to produce educational outputs or graduates (Hasanah, 2020). The educational process refers to the transformation of inputs into educational outcomes and is closely associated with institutional management, program management, learning processes, and monitoring and evaluation activities. Meanwhile, educational output represents school performance reflected in various academic and non-academic achievements. Schultz, as cited in Indrati & Hermawan (2023), categorizes educational outputs into consumption and investment. Consumption refers to expenditures whose benefits can be enjoyed directly, whereas investment refers to outcomes whose benefits can be obtained over a longer period. From this perspective, graduate quality can be viewed as a long-term educational outcome resulting from the interaction between adequate inputs and effective educational processes.

The term graduate originates from the word graduated, which means to pass an examination or successfully complete an educational requirement. Accordingly, a graduate refers to an individual who has successfully completed an educational process or passed the required examination (Sugono, 2008). In terms of quality, Amin et al., as cited in Suwar & Azhar (2022), explain that quality graduates are expected to possess competencies that enable them to create innovations, generate constructive ideas, develop strategies for addressing problems in society and the nation, and design new forms of work that contribute to social welfare and prosperity. Therefore, graduate quality encompasses not only the attainment of academic qualifications but also the development of competencies that enable graduates to respond creatively and effectively to social and professional challenges.

Graduate quality can be assessed through several indicators that reflect both academic and post-graduation outcomes. These indicators include students' achievements in academic and non-academic fields, improvements in average examination scores, and increases in the proportion of graduates accepted into higher education institutions (Suwar & Azhar, 2022). These indicators provide measurable evidence of whether an educational institution has succeeded in developing students' academic capabilities, competencies, and broader achievements. In secondary education, graduate quality is also formally regulated through graduate competency standards. These standards are stipulated in Chapter V, Article 9 of Regulation of the Minister of Education, Culture, Research, and Technology of the Republic of Indonesia No. 5 of 2022 concerning Graduate Competency Standards for Early Childhood Education, Elementary Education, and Secondary Education (Makarim,

2022). This regulation provides a normative framework for determining the competencies that students are expected to possess upon completing their secondary education.

1.3 The relationship between curriculum innovation and graduate quality level

Curriculum innovation is closely related to developing scientific knowledge and integrating technology in response to changing educational needs. As an important component of educational development, curriculum innovation can improve graduate quality by enabling educational institutions to adapt learning content, competencies, and instructional approaches to technological developments and changing societal demands. Through curriculum innovation, educational institutions can continuously update curriculum structures, learning materials, and teaching methods so that the learning process becomes more relevant, creative, innovative, and applicable to students' needs.

Implementing curriculum innovation is expected to support the development of the competencies students need to respond to future challenges, including critical thinking, creativity, communication, problem-solving, and technological literacy. These competencies relate to the broader concept of graduate quality, reflected in academic and non-academic achievements, access to higher education, and the development of soft skills. Accordingly, a curriculum responsive to contemporary educational demands may provide a stronger foundation for developing graduates who are academically competent and can adapt to changes in society and the global environment.

In a quantitative correlational study, curriculum innovation is the independent variable (X), and graduate quality is the dependent variable (Y). The conceptual relationship between the two variables assumes that greater implementation of curriculum innovation may be associated with higher levels of graduate quality. However, this relationship cannot be established solely on theoretical assumptions and must be examined empirically through appropriate statistical analysis. Therefore, investigating the relationship between curriculum innovation and graduate quality is important, particularly at SMA Muhammadiyah Boarding School Zam-Zam, as the findings may provide an empirical basis for evaluating the effectiveness of its curriculum development and for continuously improving the relevance and quality of its educational processes.

2. Methods

2.1 Types and approaches to quantitative research used

This study employs a quantitative research design with a correlational approach. Correlational research aims to determine whether a relationship exists between two or more variables and, if so, to examine whether it is statistically significant (Afif et al., 2023). Accordingly, the study uses an associative hypothesis, which examines the relationship among two or more variables (Sugiyono, 2020). The independent variable (X) is curriculum innovation, while the dependent variable (Y) is graduate quality. Based on the research problem and the conceptual relationship between the two variables, the hypotheses are formulated as follows: H₀ states that there is no significant relationship between curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam, whereas H_a states that there is a significant relationship between curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam.

The research was conducted at SMA Muhammadiyah Boarding School Zam-Zam. The selection of this research site was based on findings from a preliminary study conducted before the main research. During the pre-research visit, the researcher identified several relevant conditions and problems related to curriculum implementation and graduate quality that warranted further empirical investigation. Based on these preliminary findings, the school was considered an appropriate setting for examining the relationship between curriculum innovation and graduate quality. The research was planned for May 2 to June

20, 2025.

2.2 Population and sample

The population of this study consisted of all alumni of SMA Muhammadiyah Boarding School Zam-Zam from the 2024/2025 academic year, totaling 236 students. Given the population size and the practical limitations of collecting data from all members, the study selected a representative sample. The sampling process used a random sampling technique, giving each member of the population a chance of selection (Subhaktiyasa, 2024). To determine the required sample size from the known population, the Slovin formula was applied with a 10% margin of error. This approach yielded a sample size considered sufficiently representative of the population while remaining feasible for data collection and analysis.

$$n = \frac{N}{1 + Ne^2} \quad (\text{Eq. 1})$$

$$n = \frac{236}{1 + (236)(0.1)^2}$$

$$n = \frac{236}{3.36} = 70$$

Based on the Slovin formula, the minimum sample size required for this study was 70 students. However, after data collection and screening, only 30 questionnaires met the criteria for inclusion in the final analysis. Data screening assessed the completeness and quality of the collected responses by identifying incomplete questionnaires, inconsistent responses, and responses that did not meet the requirements for subsequent statistical analysis. Consequently, 30 valid and complete responses were retained and used in all subsequent analyses, including validity, reliability, correlation, and regression tests. Thus, although the initial sample requirement was 70 respondents, this study's statistical analysis was based on the 30 responses that remained eligible after the screening process.

2.3 Research variables

Research variables are attributes, characteristics, or values of individuals, objects, or activities that vary and are selected by researchers for study and subsequently used to draw conclusions (Djollong, 2014). This study examines two variables: curriculum innovation as the independent variable and graduate quality as the dependent variable. The independent variable is not dependent on another variable and is assumed to influence or contribute to changes in the dependent variable (Ridha, 2017). In this study, curriculum innovation serves as the independent variable (X). Curriculum innovation refers to a new approach to integrating the fundamental ideas, implementation processes, and evaluation of a curriculum into a coherent and integrated whole (Hafizon et al., 2022). Curriculum innovation is an effort by educational institutions to respond to and address critical challenges in education, particularly those arising from changes in technological development, societal needs, and educational demands.

The dependent variable is influenced by, or represents, the outcome associated with the independent variable (Ridha, 2017). In this study, graduate quality serves as the dependent variable (Y). Graduate quality, as an important component of educational outcomes, refers to the extent to which graduates demonstrate achievements and competencies in both academic and non-academic fields (Mustajib, 2020). Graduate quality is closely related to school output, as an educational institution's quality can be reflected in the extent to which its students achieve strong academic and non-academic outcomes.

Accordingly, graduate quality in this study is understood as an educational outcome that reflects students' achievements and competencies after completing their education.

2.4 Data collection technique and research instruments

This study collected data through interviews, observation, and questionnaires. The researcher conducted interviews as a two-way communication process with informants to obtain relevant and valid research data (Kamarudin et al., 2023). The interviews aimed to gain an in-depth understanding of curriculum innovation implementation at SMA Muhammadiyah Boarding School Zam-Zam, particularly curriculum development programs, relevant policies, implementation practices, and efforts to improve graduate quality. The informants were members of the school's curriculum staff who were considered knowledgeable about curriculum planning and implementation. The researcher conducted direct observations to examine how curriculum innovation was implemented in both learning and non-learning activities. The researcher observed how curriculum innovation was implemented within the school environment and reflected in educational activities. The observations also focused on the interaction between curriculum policies and their practical implementation. In addition, the researcher used questionnaires to gather supporting information from relevant respondents about their perceptions of curriculum innovation. Combining these data collection techniques enabled the researcher to compare information from different sources. This approach strengthened the credibility of the findings through data triangulation.

A questionnaire was administered to obtain quantitative data concerning respondents' perceptions of curriculum innovation and graduate quality. The questionnaire was developed based on indicators of the two research variables and used a five-point Likert scale: strongly disagree (SD), disagree (D), neutral (N), agree (A), and strongly agree (SA). The curriculum innovation variable (X) was measured through indicators covering school curriculum characteristics, curriculum integration and global development, 21st-century learning approaches and competencies, and innovation in learning. Meanwhile, the graduate quality variable (Y) was measured using indicators of academic competence and career readiness, 21st-century skills, character building and soft skills, and graduates' achievements and reputation. Each indicator was translated into questionnaire statements to enable quantitative measurement.

To complement the quantitative data, an interview guide was developed to obtain qualitative information concerning the planning, implementation, and evaluation of curriculum innovation at SMA Muhammadiyah Boarding School Zam-Zam. The questions addressed curriculum innovation planning, forms of innovation implemented to respond to students' needs and contemporary developments, classroom implementation, perceived impacts on graduate quality, and curriculum evaluation and improvement. The interview data provided contextual information and complemented the quantitative findings from the questionnaire. Table 1 presents the interview guide.

Table 1. Interview guide

Aspects Explored	Question
Curriculum innovation planning	How is the process of developing innovative curriculum carried out in this school?
Forms of innovation carried out	What innovations have been implemented in the curriculum to adapt to the needs of students and the times?
Implementation in class	How do teachers implement curriculum innovation in daily learning?
Impact on graduates	Does the implemented curriculum innovation have an impact on the quality of graduates? If so, in what way?
Evaluation and improvement	How is the curriculum evaluation and improvement process carried out so that the quality of graduates is maintained and improved?

The interview data obtained through this guide were intended to provide contextual information regarding the implementation of curriculum innovation and its perceived contribution to graduate quality. The interview findings complemented the quantitative data and supported the interpretation of the research variables. After the interview process, the questionnaire served as the main instrument for collecting quantitative data from respondents. The questionnaire instruments for curriculum innovation (X) and graduate quality (Y) consisted of ten statements for each variable and used the same five-point Likert scale. The items for variable X were designed to capture students' perceptions of curriculum characteristics, curriculum integration, 21st-century competencies, technological integration, innovative learning practices, and student development.

The questionnaire for curriculum innovation consisted of ten statements covering students' perceptions of the characteristics and implementation of the curriculum, the integration of general and Islamic boarding school education, the development of 21st-century skills, the integration of technology and global issues, critical and creative thinking, the learning environment, teaching methods, student independence, and the updating of learning materials and methods. Respondents indicated their level of agreement with each statement using the five-point Likert scale, ranging from strongly disagree (STS) to strongly agree (SS). In addition to measuring curriculum innovation, the questionnaire assessed graduate quality as the dependent variable (Y). The ten statements for this variable were developed to capture students' perceptions of the knowledge and skills acquired during their education, communication and critical thinking abilities, academic and non-academic achievements, participation in organizations or communities, confidence in facing further education or employment, character development, graduate reputation, readiness for further education or employment, and overall perceptions of graduate quality. Table 2 presents the graduate quality questionnaire items.

The graduate quality questionnaire consisted of ten statements representing academic competence, career readiness, 21st-century skills, character development, soft skills, achievements, and graduate reputation. The responses to these items were then used as quantitative data to measure and statistically analyze the dependent variable. Together, the interview, observation, and questionnaire instruments provided complementary information for examining curriculum innovation and its relationship with graduate quality at SMA Muhammadiyah Boarding School Zam-Zam.

2.5 Data analysis techniques

Data analysis used instrument validity and reliability testing, prerequisite analysis, and simple linear regression. Instrument validity refers to the extent to which an instrument accurately measures the construct it is intended to measure (Subhaktiyasa, 2024a; Sugiyono, 2020). In this study, validity was assessed using the Pearson correlation formula. Reliability refers to an instrument's consistency in producing stable results across repeated measurements (Ayu & Rosli, 2020; Janna & Herianto, 2021). Because the questionnaire employed a five-point Likert scale, reliability was assessed using Cronbach's alpha. The instrument was considered reliable based on the Cronbach's alpha criteria presented in Table 2.

Table 2. Cronbach's alpha coefficient criteria

Cronbach's alpha	Category
≥ 0.90	Very reliable
0.80 – 0.89	Reliable
0.70 – 0.79	Quite reliable
< 0.70	Less reliable

After assessing the instrument, we conducted prerequisite tests to determine whether the data met the assumptions required for subsequent analysis. The normality test assessed whether the data were normally distributed. Given the sample size of 30 respondents, the

Shapiro–Wilk test was applied; a significance value greater than 0.05 indicated normally distributed data. A linearity test was also conducted using ANOVA to determine whether a linear relationship existed between curriculum innovation (X) and graduate quality (Y). A significance value greater than 0.05 indicated a linear relationship between the two variables.

Finally, simple linear regression was employed to examine the relationship between curriculum innovation (X) and graduate quality (Y) and to determine its direction and significance. The regression equation was expressed as:

$$Y = a + Bx \quad (\text{Eq. 2})$$

Where Y represents graduate quality, X represents curriculum innovation, a represents the constant, and b represents the regression coefficient. The regression results were used to determine whether curriculum innovation was significantly related to graduate quality. The analysis also estimated how changes in curriculum innovation were associated with changes in graduate quality. The significance of the regression coefficient was assessed to determine whether the observed relationship was statistically meaningful. The coefficient of determination was also considered to indicate the proportion of variation in graduate quality explained by curriculum innovation. These results were interpreted in relation to the research objectives and the study's educational context.

3. Results and Discussion

3.1 Results of instrument validity and reliability tests

The validity and reliability tests evaluated the quality of the questionnaire instruments used to measure curriculum innovation (X) and graduate quality (Y). The validity test used the Pearson correlation coefficient, comparing the calculated correlation coefficient with the critical value and examining the significance level. The reliability of each variable was subsequently assessed using Cronbach's alpha to determine the internal consistency of the retained items.

3.1.1 Validity and reliability of the curriculum innovation instrument

The validity test of the curriculum innovation instrument was conducted by comparing the correlation coefficient (r count) of each item with the critical value (r table) of 0.3610 and examining its significance value, with an item considered valid when r count > 0.3610 and Sig. < 0.05. As shown in Table 5, eight of the ten items met these criteria: Q02, Q04, Q05, Q06, Q07, Q08, Q09, and Q10. Their r count values ranged from 0.538 to 0.764, with significance values between < 0.001 and 0.002. In contrast, Q01 and Q03 were invalid, with r count values of 0.186 and 0.330 and significance values of 0.325 and 0.075, respectively. Both items failed to meet the validity criteria and were therefore excluded from subsequent analysis, leaving eight valid items to measure curriculum innovation.

The reliability of the eight retained items was subsequently assessed using Cronbach's alpha. The analysis yielded a Cronbach's alpha coefficient of 0.833, indicating high internal consistency among the items. This result suggests that the eight retained items consistently measure the curriculum innovation construct and demonstrate adequate reliability for further statistical analysis. Accordingly, the final curriculum innovation instrument consisted of eight valid and reliable items. These findings provide sufficient evidence that the retained items can represent the curriculum innovation variable in the study. Therefore, the subsequent analysis used the eight validated and reliable items. The results also ensure that the interpretation of curriculum innovation is based on measurement indicators that meet the established statistical criteria.

Table 3. Validity test results for each item of the curriculum innovation instrument

Instrument/Questionnaire	r count	r Table	Sig.	Information
Q01: The curriculum implemented in my school feels different compared to other schools	0.186	0.3610	0.325	Invalid
Q02: The curriculum that I am following combines general education and Islamic boarding school education well	0.629	0.3610	< 0.001	Valid
Q03: Schools provide learning that supports the development of 21st-century skills	0.330	0.3610	0.075	Invalid
Q04: Subject matter is often linked to technological developments and global issues	0.581	0.3610	< 0.001	Valid
Q05: Teachers utilize digital technology in the classroom learning process	0.538	0.3610	0.002	Valid
Q06: The curriculum in schools encourages students to think critically and creatively	0.748	0.3610	< 0.001	Valid
Q07: The learning environment in schools supports the implementation of innovative curricula	0.680	0.3610	< 0.001	Valid
Q08: I feel the teacher's teaching methods are quite varied and interesting	0.764	0.3610	< 0.001	Valid
Q09: The school curriculum fosters students' independence and responsibility	0.690	0.3610	< 0.001	Valid
Q10: Schools often update materials or learning methods	0.600	0.3610	< 0.001	Valid

As shown in Table 3, Q01 and Q03 did not meet the validity criteria because their correlation coefficients were below the critical value and their significance values exceeded 0.05. Therefore, these two items were excluded, while the remaining eight items were retained for further analysis. Among the valid items, Q08 demonstrated the highest correlation with the total curriculum innovation score ($r = 0.764$), followed by Q06 ($r = 0.748$), indicating relatively strong item-total relationships.

After removing the invalid items, the reliability of the remaining eight items was assessed using Cronbach's alpha. The instrument obtained a Cronbach's alpha coefficient of 0.833, indicating good internal consistency among the retained items. Thus, the eight-item curriculum innovation instrument was considered both valid and reliable and was subsequently used in the analysis.

Following the validity assessment, a reliability test was conducted to determine the internal consistency of the eight retained items measuring curriculum innovation. The reliability analysis used Cronbach's alpha, with the results presented in Table 4. The analysis used both the original item scores and standardized items to assess the instrument's consistency.

Table 4. Reliability test results of the curriculum innovation instrument

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
0.833	0.836	8

As shown in Table 4, the curriculum innovation instrument had a Cronbach's alpha of 0.833, while the Cronbach's alpha based on standardized items was 0.836, with eight items in the analysis. Both coefficients indicate high internal consistency, showing that the retained items consistently measure the curriculum innovation construct. These results confirm that the eight-item instrument has adequate reliability and can be used for subsequent analysis. To further examine each item's contribution to the instrument's overall reliability, we conducted an item-total analysis.

The item-total analysis examined the extent to which each retained item contributed to the overall curriculum innovation construct. The analysis considered the Corrected Item-Total Correlation and Cronbach's alpha if Item Deleted for each item. Table 5 presents the detailed results.

Table 5. Item-total statistics for the curriculum innovation instrument

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
X2	25.33	12.161	0.490	0.400	0.823
X4	25.37	12,792	0.430	0.306	0.829
X5	25.23	12.185	0.447	0.478	0.829
X6	25.67	11,678	0.689	0.688	0.799
X7	25.87	11,016	0.559	0.450	0.817
X8	25.90	11,334	0.693	0.710	0.796
X9	25.27	11,720	0.577	0.526	0.811
X10	25.53	11,430	0.637	0.676	0.803

Table 5 shows that all eight retained items had Corrected Item-Total Correlation values above 0.30, ranging from 0.430 to 0.693. The lowest value was observed for X4 (0.430), while X8 showed the highest correlation (0.693), indicating that all items had an adequate relationship with the overall curriculum innovation score. Furthermore, the Cronbach's alpha if Item Deleted values ranged from 0.796 to 0.829, all of which were lower than the overall Cronbach's alpha of 0.833. This indicates that removing any retained item would not improve the instrument's overall reliability. Therefore, all eight valid items were retained for subsequent analysis.

3.1.2 Validity and reliability of the graduate quality instrument

The validity test was also conducted on the ten items measuring graduate quality. Table 8 presents the results. The test determined whether each item adequately measured the intended construct. The results provide a basis for assessing the items' suitability for subsequent data analysis.

Table 6. Validity test results for each item of the graduate quality instrument

Instrument	r count	r Table	Sig.	Information
Q01: I feel that the knowledge and skills from school are sufficient to compete in college or the world of work	0.706	0.3610	< 0.001	Valid
Q02: I have good communication skills as a result of learning at school	0.671	0.3610	< 0.001	Valid
Q03: School helped me develop critical and analytical thinking skills	0.749	0.3610	< 0.001	Valid
Q04: I have achieved academic or non-academic achievements during or after graduating from school	0.124	0.3610	0.519	Invalid
Q05: My learning experience at school encouraged me to be active in organizations or communities	0.596	0.3610	< 0.001	Valid
Q06: I feel confident in facing challenges in college or the workplace	0.848	0.3610	< 0.001	Valid
Q07: Learning at school helps shape my attitude and character	0.746	0.3610	< 0.001	Valid
Q08: I feel that Zam-Zam High School graduates have a good reputation outside the school environment	0.619	0.3610	< 0.001	Valid
Q09: I feel ready and capable of facing college entrance exams or job selection	0.703	0.3610	< 0.001	Valid
Q10: I feel that the quality of Zam-Zam High School graduates is relatively high compared to other schools	0.703	0.3610	< 0.001	Valid

The results indicate that nine of the ten items were valid, namely Questions 01, 02, 03, 05, 06, 07, 08, 09, and 10. All of these items had significance values below 0.05 and correlation coefficients greater than the critical value of 0.3610. Question 04 was classified

as invalid because its correlation coefficient was 0.124 and its significance value was 0.519. Therefore, one item was excluded from further analysis, leaving nine valid items for measuring graduate quality. The reliability test was subsequently conducted using Cronbach's alpha. The resulting coefficient was 0.877 based on nine retained items, indicating that the graduate quality instrument had reliable internal consistency and was appropriate for subsequent statistical analysis.

Table 7. Reliability test results of the graduate quality instrument

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
0.877	0.879	9

The Item-Total Statistics results showed that all retained items had Corrected Item-Total Correlation values above 0.30, ranging from 0.473 to 0.802. These results indicate that the retained items correlated adequately with the total score and contributed to measuring the graduate quality construct. Furthermore, the Cronbach's alpha if Item Deleted values did not exceed the overall coefficient of 0.877, indicating that deleting any retained item would not improve the instrument's reliability.

Table 8. Item-total statistics for the graduate quality instrument

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Y1	30.87	17,775	0.578	0.553	0.869
Y2	30.60	18,179	0.588	0.630	0.867
Y3	30.60	17,972	0.680	0.509	0.859
Y5	30.37	18,723	0.473	0.514	0.877
Y6	30.57	17,082	0.802	0.738	0.848
Y7	30.47	17,499	0.668	0.677	0.860
Y8	30.23	19,151	0.549	0.487	0.870
Y9	30.43	17,220	0.642	0.567	0.863

Overall, the instrument testing indicates that eight items for curriculum innovation and nine items for graduate quality met the validity criteria and were retained for subsequent analysis. Both instruments also demonstrated adequate internal consistency, with Cronbach's alpha coefficients of 0.833 and 0.877, respectively.

3.2 Prerequisite analysis test results

3.2.1 Normality and linearity test

The normality test was conducted to determine whether the data for curriculum innovation and graduate quality followed a normal distribution. Because the study involved 30 respondents, the Shapiro-Wilk test was used as the primary reference for assessing normality.

Table 9. Normality test results

Tests of normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Total_X	0.139	30	0.142	0.950	30	0.168
Total_Y	0.099	30	0.200 *	0.981	30	0.841

*. This is a lower bound of the true significance.

a. Lilliefors significance correction

The Shapiro-Wilk results show that Total_X had a significance value of 0.168, while Total_Y had a significance value of 0.841. Both values were greater than 0.05, indicating that the data for curriculum innovation and graduate quality were normally distributed.

Therefore, the normality assumption required for subsequent parametric analysis was satisfied. A linearity test examined whether a linear model could appropriately represent the relationship between curriculum innovation (X) and graduate quality (Y). Table 10 presents the ANOVA results.

Table 10. Linearity test results between curriculum innovation and graduate quality

			Sum of squares	df	Mean square	F	Sig.
Total_X*	Between groups	(Combined)	386,633	16	24.165	3.402	0.016
Total_Y	Within groups		92,333	13	7.103		
	Total		478,967	29			

3.2.2 Simple linear regression analysis test results

Simple linear regression analysis was conducted to examine the relationship between curriculum innovation and graduate quality and to determine the extent to which curriculum innovation could statistically explain variation in graduate quality. Table 11 presents the ANOVA results.

Table 11. ANOVA results of the regression model

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	348,969	1	348,969	27,982	0.000 ^b
	Residual	349,197	28	12,471		
	Total	698,167	29			

a. Dependent Variable: Total_Y

b. Predictors: (Constant), Total_X

The regression model produced an F value of 27.982 with a significance value of < 0.001. This result indicates that the regression model was statistically significant, suggesting that curriculum innovation was significantly associated with graduate quality. Table 12 presents the strength of the relationship and the proportion of variance explained by the model.

Table 12. Model summary

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	0.707 ^a	0.500	0.482	3,531

a. Predictors: (Constant), Total_X

The model produced an R value of 0.707, indicating a strong positive relationship between curriculum innovation and graduate quality. The R Square value of 0.500 indicates that 50.0% of the variance in graduate quality is statistically explained by curriculum innovation, while the remaining 50.0% is associated with other factors not included in the model. Table 13 presents the regression coefficient results.

Table 13. Regression coefficient results

Table 10: Regression Coefficient Results						
Coefficients ^a						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.133	5,839		1.222	0.232
	Total X	0.854	0.161	0.707	5.290	0.000

a. Dependent Variable: Total_Y

Based on the coefficient results, the regression equation can be expressed as:

$$Y = 7.133 + 0.845X \quad (\text{Eq. 3})$$

The coefficient for curriculum innovation was 0.854 with a significance value of < 0.001 , indicating a statistically significant positive relationship between curriculum innovation and graduate quality. Thus, higher curriculum innovation scores were associated with higher graduate quality scores in the studied sample. The constant was 7.133, with a significance value of 0.232.

3.2.3 Pearson correlation test results

To further examine the strength and significance of the relationship between the two variables, a Pearson correlation test was conducted. Table 14 presents the results. This test determined the direction and strength of the linear relationship between curriculum innovation and graduate quality. The correlation coefficient indicates how closely the two variables are associated, while the significance value determines whether the observed relationship is statistically significant.

Table 14. Pearson correlation test results

Correlations		Total_X	Total_Y
Total_X	Pearson correlation	1	0.707 **
	Sig. (2-tailed)		0.000
	N	30	30
Total_Y	Pearson correlation	0.707 **	1
	Sig. (2-tailed)	0.000	
	N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation analysis yielded an r value of 0.707 ($p < 0.001$) based on 30 respondents. This result indicates a strong and statistically significant positive relationship between curriculum innovation and graduate quality. The finding is consistent with the regression analysis, which also demonstrated a significant positive association between the two variables.

3.3 Discussion

An important finding of this study is the role of curriculum integration in shaping graduate quality. The curriculum implemented at SMA Muhammadiyah Boarding School Zam-Zam combines formal academic education with Islamic boarding school values, creating a holistic educational environment. This integration allows students to develop not only cognitive competencies but also affective and moral dimensions essential for long-term success (Rachmad, 2022). This finding supports the view that graduate quality should be assessed not only through academic achievement indicators but also through character formation, leadership capacity, ethical awareness, and social responsibility (Gamage et al., 2021; Smith & Bath, 2006; Ningsih et al., 2021). In this context, curriculum innovation provides a mechanism for balancing intellectual development with character education. Therefore, the positive relationship between curriculum innovation and graduate quality may reflect the school's ability to integrate multiple dimensions of learning into a coherent educational framework.

The findings also indicate that learning innovation embedded within the curriculum contributes to more student-centered educational experiences. Traditional learning approaches often emphasize memorization and passive knowledge acquisition, whereas innovative curricula encourage active participation, inquiry, collaboration, and problem-solving. Through varied instructional methods and technology-supported learning environments, students have opportunities to engage more deeply with learning content. Such experiences can promote higher-order thinking skills and strengthen students' confidence in applying knowledge to real-life situations. Consequently, the benefits of

curriculum innovation may extend beyond classroom achievement and contribute to the development of lifelong learning competencies that remain valuable after graduation.

From an educational management perspective, the results suggest that curriculum innovation should be understood as an institutional commitment rather than merely a revision of curriculum documents. Effective curriculum innovation requires support from school leadership, teacher readiness, organizational culture, and continuous evaluation mechanisms. The strong relationship identified in this study may indicate that institutional factors support curriculum innovation at SMA Muhammadiyah Boarding School Zam-Zam and facilitate its implementation. Curriculum innovation that exists only at the planning level may fail to generate meaningful educational outcomes. Therefore, successful curriculum innovation depends not only on curriculum design but also on the quality of its implementation across educational activities within the school environment.

The 50% contribution value in this study indicates that curriculum innovation accounts for a substantial proportion of the observed variation in graduate quality. Educational outcomes are generally influenced by numerous interacting variables, making it uncommon for a single factor to explain a very large proportion of variance (Dahri et al., 2024; Li & Xue, 2023; Li & Wang, 2022). Therefore, the finding that curriculum innovation statistically explains 50% of the variance in graduate quality highlights its importance within the studied institution. At the same time, the remaining 50% indicates that other factors also contribute to graduate quality and were not examined in this study.

The strong correlation identified in this study also reflects the increasing importance of curriculum responsiveness in the era of educational transformation. Rapid developments in science, technology, globalization, and labor market demands require schools to continuously adjust educational content and learning approaches (Gümüş, 2022; Khalilov et al., 2024; Hossain, 2023). Educational institutions that maintain static curricula may struggle to prepare students for contemporary challenges. Conversely, institutions that actively adapt their curricula may be better positioned to produce graduates with relevant competencies and greater adaptability. The findings therefore reinforce the importance of curriculum innovation as a strategy for maintaining educational relevance and responsiveness to changing societal demands.

Finally, this study contributes to the growing body of literature on curriculum innovation within Islamic boarding school-based educational institutions. While many previous studies have focused on curriculum innovation in conventional schools, empirical evidence from integrated Islamic educational settings remains relatively limited. The present findings indicate that curriculum innovation can be implemented within a boarding school environment while maintaining religious and character-based educational objectives. Rather than being mutually exclusive, educational modernization and religious values can be integrated within a curriculum framework that supports academic competence, character formation, and social responsibility.

3.4 Objectives and limitations

This study aimed to examine the relationship between curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam. The findings indicate that this objective was achieved, as curriculum innovation demonstrated a strong and statistically significant positive relationship with graduate quality. The Pearson correlation coefficient was 0.707 ($p < 0.001$), and the regression model showed that curriculum innovation explained 50.0% of the variance in graduate quality. These findings provide empirical support for the proposed relationship between curriculum innovation and graduate quality within the context of an integrated Islamic boarding school.

This study has several limitations that should be considered when interpreting the findings. First, the study was conducted at only one educational institution, SMA Muhammadiyah Boarding School Zam-Zam, which limits the generalizability of the findings to other schools with different institutional, geographical, or educational characteristics. Second, although the initial sample size was determined as 70 respondents using the Slovin

formula, only 30 valid questionnaires were retained after data screening. The relatively small final sample may limit the statistical generalizability of the findings. Third, the study examined only curriculum innovation as the independent variable, whereas graduate quality may also be associated with other factors, such as teacher competence, school leadership, learning environment, student characteristics, and family or social conditions. Finally, the correlational design identifies statistical relationships between variables but does not establish causation. Therefore, the findings should be interpreted as evidence of association rather than definitive evidence that curriculum innovation directly causes improvements in graduate quality.

4. Conclusions

Based on the research results, curriculum innovation and graduate quality at SMA Muhammadiyah Boarding School Zam-Zam are strongly and significantly related. The regression results show that curriculum innovation contributes 50% to graduate quality, with a Pearson correlation coefficient of 0.707, indicating a strong, positive relationship. This means that the higher the level of curriculum innovation, the higher the quality of graduates produced by the school.

The curriculum innovations include updating the curriculum structure, using technology in learning, integrating the values of Islamic boarding schools and general education, and strengthening 21st-century competencies. The quality of graduates is measured through academic and non-academic indicators, including critical thinking skills, communication, self-confidence, achievement, and readiness to face global challenges. Thus, this study emphasizes the importance of developing and implementing curriculum innovation sustainably to improve graduate quality so they can compete in higher education and the world of work at both national and international levels.

Acknowledgement

The authors would like to express their sincere gratitude to all respondents from SMA MBS Zamzam for their valuable participation and contributions to this research..

Author Contribution

A.E.S.: Conceptualization, Methodology, Data Curation, Formal Analysis, Investigation, Writing – Original Draft, Writing – Review & Editing. I.N.: Supervision, Methodology, Validation, Writing – Review & Editing, Project Administration.

Funding

This research received no external funding.

Ethical Review Board Statement

Not available.

Informed Consent Statement

Not available.

Data Availability Statement

Not available.

Conflicts of Interest

The authors declare no conflict of interest.

Declaration of Generative AI Use

The authors declare that they used ChatGPT and Grammarly to improve language, check grammar, and edit this manuscript. The authors remain fully responsible for the

content, interpretation, analysis, and conclusions presented in the manuscript..

Open Access

©2026. The authors. This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original authors and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit: <http://creativecommons.org/licenses/by/4.0/>

References

- Afif, Z., Azhari, D. S., Kustati, M., & Sepriyanti, N. (2023). Scientific research (quantitative) along with paradigms, approaches, basic assumptions, characteristics, data analysis methods and output. *Innovative: Journal of Social Science Research*, 3(3), 682–693. <https://j-innovative.org/index.php/Innovative%0APenelitian>
- All, M. A., Kamaruddin, S. A., & Ahmadin. (2024). Curriculum innovation: Analysis of factors influencing curriculum development in the digital era. *PESHUM: Jurnal Pendidikan, Sosial dan Humaniora*, 4(1), 1232–1237. <https://doi.org/10.56799/peshum.v4i1.7068>
- As'adiyah, & Abdurrahman. (2024). Strategy to improve graduate quality in the leading language program at SMA Nurul Jadid. *Jurnal Educatio*, 10(1), 114–121. <https://doi.org/10.31949/educatio.v10i1.6763>
- Ayu, S., & Rosli, M. S. B. (2020). Reliability test of SPADA (learning system in network) usage instrument. *Biormatika: Jurnal Ilmiah Fakultas Keguruan dan Ilmu Pendidikan*, 6(1), 145–155. <https://doi.org/10.35569/biormatika.v6i1.706>
- Dahri, N. A., Yahaya, N., Al-Rahmi, W. M., Vighio, M. S., Alblehai, F., Soomro, R. B., & Shutaleva, A. (2024). Investigating AI-based academic support acceptance and its impact on students' performance in Malaysian and Pakistani higher education institutions. *Education and Information Technologies*, 29(14), 18695–18744. <https://doi.org/10.1007/s10639-024-12599-x>
- Djollong, A. A. (2014). Technique of quantitative research. *Istiqra'*, 2(1), 86–100. <https://jurnal.umpar.ac.id/index.php/istiqra/article/view/224>
- Fajar, A., Setiawan, F., & Fadila, M. (2022). National education system law revision policy. *Journal of Education and Development*, 10(3), 170–174. <https://doi.org/10.37081/ed.v10i3.3945>
- Fatimah, I., et al. (2021). Curriculum innovation strategy: A theoretical review. *EduTeach: Journal of Education and Learning Technology*, 2(1), 16–30. <https://doi.org/10.37859/eduteach.v2i1.2412>
- Gamage, K. A. A., Dehideniya, D. M. S. C. P. K., & Ekanayake, S. Y. (2021). The role of personal values in learning approaches and student achievements. *Behavioral Sciences*, 11(7), 102. <https://doi.org/10.3390/bs11070102>
- Gümüş, A. (2022). Twenty-first-century teacher competencies and trends in teacher training. In Y. Alpaydın & C. Demirli (Eds.), *Educational theory in the 21st century*. Palgrave Macmillan. https://doi.org/10.1007/978-981-16-9640-4_11
- Hafizon, A., Mansur, A., & Bakar, A. (2022). The concept of curriculum innovation and learning of Islamic religious education. *Indonesian Journal of Educational Science Research*, 1(2), 310–317. <https://doi.org/10.31004/jpion.v1i2.63>
- Hasanah, U. (2020). Analysis of quality and quality of input-process-output of education at MAN 2 Yogyakarta. *MANAGERE: Indonesian Journal of Educational Management*, 2(2), 171–181. <https://doi.org/10.52627/ijeam.v2i2.38>
- Hossain, K. A. (2023). Evaluation of technological breakthrough in global education and future employment opportunity. *Journal of Liberal Arts and Humanities*, 4(8), 1–62.

- Indrati, B., & Hermawan, A. (2023). Output and quality of education. *Karimiyah*, 3(1), 65–78. <https://doi.org/10.59623/karimiyah.v3i1.30>
- Janna, N., & Herianto. (2021). The concept of validity and reliability testing using SPSS. *Darul Dakwah Wal-Irsyad (DDI) Journal*, 1–12. <https://doi.org/10.31219/osf.io/v9j52>
- Kamarudin, I., Firmansah, D., Zulkifli, Amane, A. P., & Nasarudin. (2023). *Quantitative research methodology*. PT Global Executive Technology.
- Khalilov, T., Aliyev, V., Guliyeva, M., & Babayeva, M. (2024). Strategic management mechanisms, directions, and functions in higher education. *Pakistan Journal of Life and Social Sciences*, 22(2), 12146–12162. <https://doi.org/10.57239/PJLSS-2024-22.2>
- Khasanah, U. (2022). *Development of educational curriculum: Innovation and review*. Tahta Media Group.
- Kurniati, P., Kelmaskouw, A. L., Deing, A., & Haryanto, B. A. (2022). The independent curriculum innovation process model and its implications for 21st century students and teachers. *Journal of Citizenship Virtues*, 2(2), 408–423. <https://doi.org/10.37640/jcv.v2i2.1516>
- Li, J., & Xue, E. (2023). Dynamic interaction between student learning behaviour and learning environment: Meta-analysis of student engagement and its influencing factors. *Behavioral Sciences*, 13(1), 59. <https://doi.org/10.3390/bs13010059>
- Li, S., & Wang, W. (2022). Effect of blended learning on student performance in K–12 settings: A meta-analysis. *Journal of Computer Assisted Learning*, 38(5), 1254–1272. <https://doi.org/10.1111/jcal.12696>
- Makarim, N. (2022). *Regulation of the minister of education and culture, research, technology and higher education number 5 of 2022*.
- Mariam, S., & Sukirman, D. (2021). The function of early childhood education (PAUD) curriculum management. *Jurnal Inovasi Kurikulum*, 18(2), 208–221. <https://doi.org/10.17509/jik.v18i2.36457>
- Mustajib, U. S. D. (2020). Implementasi manajemen mutu sebagai upaya meningkatkan mutu lulusan di MTs Al Huda Sumberjo Tuglur Badas. *Salimiya: Jurnal Studi Ilmu Keagamaan Islam*, 1(4), 73–89. <https://ejournal.iaifa.ac.id/index.php/salimiya>
- Ningsih, T., Yuwono, D., Sholehuddin, M., & Suharto, A. (2021). The significant of e-assessment for Indonesian literacy with character education in pandemic era. *Journal of Social Studies Education Research*, 12(4), 231–256. <https://www.learntechlib.org/p/220460/>
- Ridha, N. (2020). Proses penelitian, masalah, variabel dan paradigma penelitian. *Hikmah*, 14(1), 62–70. <https://e-jurnal.staisumatera-medan.ac.id/index.php/hikmah/article/view/18>
- Rojak, A. (2022). Learning management in improving the quality of graduates at Madrasah Aliyah in Serang City, Banten Province. *Al-Afkar: Journal for Islamic Studies*, 5(4), 290–297. <https://doi.org/10.31943/afkarjournal.v5i4.381>
- Sabdarifanti, T., Hanifah, N., Rizqi, A. K., & Artajaya, U. (2021). Curriculum innovation: Educational materials. *JIRA: Journal of Innovation and Academic Research*, 2(10), 1460–1476. <https://doi.org/10.47387/jira.v2i10.234>
- Smith, C., & Bath, D. (2006). The role of the learning community in the development of discipline knowledge and generic graduate outcomes. *Higher Education*, 51, 259–286. <https://doi.org/10.1007/s10734-004-6389-2>
- Subhaktiyasa, P. G. (2024). Evaluasi validitas dan reliabilitas instrumen penelitian kuantitatif: Sebuah studi pustaka. *Journal of Education Research*, 5(4), 5599–5609. <https://doi.org/10.37985/jer.v5i4.1747>
- Subhaktiyasa, P. G. (2024). Menentukan populasi dan sampel: Pendekatan metodologi penelitian kuantitatif dan kualitatif. *Jurnal Ilmiah Profesi Pendidikan*, 9(4), 2721–2731. <https://doi.org/10.29303/jipp.v9i4.2657>
- Sugiyono. (2020). *Quantitative, qualitative and R&D research methodology*. Alfabeta.
- Sugono, D. (2008). *Indonesian dictionary*. Language Center.

- Suwar, A., & Azhar, A. (2022). Analisis perencanaan peningkatan kualitas mutu lulusan di sekolah. *Tadabbur: Jurnal Peradaban Islam*, 4(1), 36-45. <https://doi.org/10.22373/tadabbur.v4i2.299>
- Syafar, D., Sidik, F., & Arif Kurniawan, M. (2024). Menentukan dan mengukur standar mutu pendidikan (Studi di sekolah dasar negeri Kota Gorontalo). *Tadbir: Jurnal Manajemen Pendidikan Islam*, 12(1), 106–119. <https://doi.org/10.30603/tjmpi.v12i1.4693>
- Usdarisman, U., Hendrayadi, H., Azhari, D. S. ., & Basit, A. . (2024). Pengertian dan konsep dasar kurikulum dalam berbagai perspektif. *Jurnal Review Pendidikan Dan Pengajaran*, 7(3), 7578–7586. <https://doi.org/10.31004/jrpp.v7i3.29784>
- Utomo, S. T., & Ifadah, L. (2020). Inovasi kurikulum dalam dimensi tahapan pengembangan kurikulum pendidikan agama Islam. *Journal of Research and Thought on Islamic Education (JRTIE)*, 3(1), 19-38. <https://doi.org/10.24260/jrtie.v3i1.1570>
- Rachmad, Y. E. (2022). *Emotional integration theory*. Heidelberger Schloss Buch Internationaler Verlag.

Biographies of Authors

Ari Eka Setyaningrum, Department of Islamic Education Management, Postgraduate Program, Universitas Islam Negeri Profesor Kiai Haji Saifuddin Zuhri, Purwokerto, Central Java 53124, Indonesia.

- Email: arisetyaningrum894@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A

Ifada Novikasari, Department of Mathematics Education, Faculty of Tarbiyah and Teacher Training, Universitas Islam Negeri Profesor Kiai Haji Saifuddin Zuhri, Purwokerto, Central Java 53124, Indonesia.

- Email: ifa_da@uinsaizu.ac.id
- ORCID: 0000-0002-3575-7893
- Web of Science ResearcherID: N/A
- Scopus Author ID: 57210969171
- Homepage: <https://sinta.kemdikbud.go.id/authors/profile/6081272&view=overview>