

Digital Learning in Crisis: Assessing Zenius's Role in Sustaining Educational Quality at Madrasah Aliyah Pondok Pesantren Ali Maksum During Pandemic Era

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Article Info

Received:

2024-05-09

Revised:

2024-06-03

Approved:

2024-06-05

Keywords

Islamic Boarding School, Pandemic Era, Madrasah Aliyah Students, Quality of Learning, Zenius Learning Room.

 OPEN ACCESS

Abstract: This study investigates the adoption of the Zenius digital learning platform at Madrasah Aliyah Pondok Pesantren Ali Maksum, an Islamic boarding school in Yogyakarta, during the pandemic era. Employing a qualitative case study methodology, the research focuses on the school's strategic use of Zenius to maintain educational quality for 12th-grade students. Methodological triangulation, encompassing interviews, observations, and document analysis, enabled an in-depth evaluation of the digital learning implementation and its impacts. Key findings indicate that Zenius, with features like ZenBot, Live Classes, and a comprehensive Content Library, effectively supported the learning process, evidenced by the UTBK (University Entrance Test) scores analysis. Despite its successful application, challenges were noted in tutors' subject matter mastery and the need for more individualised instruction. The study's limitations include its focus on a single institution and reliance on observational data, which may affect generalizability. The research contributes to the discourse on educational technology, highlighting the necessity for adaptable, student-centred learning environments and continuous educator training. Future research directions include broadening the scope to multiple institutions and incorporating qualitative analyses to better understand technology's role in education during crises. This study underscores the importance of integrating innovative educational methods, particularly in challenging times, with implications for educational policy and practices.

Abstrak: Penelitian ini menyelidiki adopsi platform pembelajaran digital Zenius di Madrasah Aliyah Pondok Pesantren Ali Maksum, sebuah pesantren di Yogyakarta, selama masa pandemi. Menggunakan metodologi studi kasus kualitatif, penelitian ini berfokus pada penggunaan strategis Zenius oleh sekolah untuk mempertahankan kualitas pendidikan bagi siswa kelas 12. Triangulasi metodologis, yang mencakup wawancara, observasi, dan analisis dokumen, memungkinkan evaluasi mendalam tentang implementasi pembelajaran digital dan dampaknya. Temuan utama menunjukkan bahwa Zenius, dengan fitur-fitur seperti ZenBot, Kelas Live, dan Perpustakaan Konten yang komprehensif, secara efektif mendukung proses pembelajaran, seperti yang dibuktikan oleh analisis skor UTBK (Ujian Tulis Berbasis Komputer). Meskipun aplikasi ini berhasil, tantangan tercatat dalam penguasaan materi oleh tutor dan kebutuhan akan pengajaran yang lebih individual. Keterbatasan penelitian ini termasuk fokus pada satu institusi dan ketergantungan pada data observasional, yang dapat mempengaruhi generalisasi. Penelitian ini berkontribusi pada diskusi tentang teknologi pendidikan, menyoroti pentingnya lingkungan pembelajaran yang adaptif dan berpusat pada siswa serta pelatihan terus-menerus bagi pendidik. Arah penelitian di masa depan mencakup memperluas cakupan ke beberapa institusi dan menggabungkan analisis kualitatif untuk pemahaman yang lebih mendalam tentang peran teknologi dalam pendidikan selama krisis. Studi ini menekankan pentingnya mengintegrasikan metode pendidikan inovatif, terutama di masa-masa sulit, dengan implikasi bagi kebijakan dan praktik pendidikan.

1. Introduction

The Covid-19 pandemic has indisputably precipitated a global crisis, leaving a lasting impact on numerous sectors worldwide. The education sector is most profoundly affected and has undergone a radical transformation to adapt to the new reality.^{1,2,3} In Indonesia, the need to prevent the virus's spread while maintaining the continuity of education led to a massive shift from traditional teaching methodologies to distance learning, also known as "Pembelajaran Jarak Jauh" (PJJ).^{4,5} This transition necessitated the widespread adoption of digital platforms and technology to facilitate effective learning.^{6,7} It also highlighted the importance of digital literacy among students and educators and the need for robust and reliable internet infrastructure.^{8,9,10}

During these challenging times, the Pondok Pesantren, a significant institution in Indonesian education, has had to navigate the complexities of this abrupt transition.^{11,12,13} Like many other educational institutions, it has had to manage the risk of pandemic-era transmission within its community while striving to maintain the quality of education.¹⁴ It is also worth noting that these institutions have traditionally relied on face-to-face

¹ Barbara B Lockee, "Online Education in the Post-COVID Era," *Nature Electronics* 4, no. 1 (January 25, 2021): 5–6, <https://doi.org/10.1038/s41928-020-00534-0>.

² Lina Noersanti et al., "Pandemi COVID-19 : Tantangan, Dampak Sosial Ekonomi Serta Potensi Solusi," *PROGRESIF: Jurnal Pengabdian Komunitas Pendidikan* 1, no. 1 (June 25, 2021): 7–14, <https://doi.org/10.36406/progresif.v1i1.407>.

³ I Dewa Gde Sugihamretha, "Respon Kebijakan: Mitigasi Dampak Wabah Covid-19 Pada Sektor Pariwisata," *Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning* 4, no. 2 (June 8, 2020): 191–206, <https://doi.org/10.36574/jpp.v4i2.113>.

⁴ Muhamad Asvial, Jihar Mayangsari, and Alvin Yudistriansyah, "Behavioral Intention of E-Learning: A Case Study of Distance Learning at a Junior High School in Indonesia Due to the COVID-19 Pandemic," *International Journal of Technology* 12, no. 1 (January 20, 2021): 54, <https://doi.org/10.14716/ijtech.v12i1.4281>.

⁵ Matdio Siahaan, "Dampak Pandemi Covid-19 Terhadap Dunia Pendidikan," *Jurnal Kajian Ilmiah* 1, no. 1 (July 31, 2020): 73–80, <https://doi.org/10.31599/jki.v1i1.265>.

⁶ Abid Haleem et al., "Understanding the Role of Digital Technologies in Education: A Review," *Sustainable Operations and Computers* 3 (2022): 275–85, <https://doi.org/https://doi.org/10.1016/j.susoc.2022.05.004>.

⁷ Benjamin Luke Moorhouse and Kevin M Wong, "Blending Asynchronous and Synchronous Digital Technologies and Instructional Approaches to Facilitate Remote Learning," *Journal of Computers in Education* 9, no. 1 (March 14, 2022): 51–70, <https://doi.org/10.1007/s40692-021-00195-8>.

⁸ Catherine Audrin and Bertrand Audrin, "Key Factors in Digital Literacy in Learning and Education: A Systematic Literature Review Using Text Mining," *Education and Information Technologies* 27, no. 6 (July 10, 2022): 7395–7419, <https://doi.org/10.1007/s10639-021-10832-5>.

⁹ Maria Spante et al., "Digital Competence and Digital Literacy in Higher Education Research: Systematic Review of Concept Use," ed. Shuyan Wang, *Cogent Education* 5, no. 1 (January 1, 2018): 1519143, <https://doi.org/10.1080/2331186X.2018.1519143>.

¹⁰ Hasan Tinmaz et al., "A Systematic Review on Digital Literacy," *Smart Learning Environments* 9, no. 1 (December 8, 2022): 21, <https://doi.org/10.1186/s40561-022-00204-y>.

¹¹ M Falikul Isbah, "Pesantren in the Changing Indonesian Context: History and Current Developments," *QIJS (Qudus International Journal of Islamic Studies)* 8, no. 1 (June 22, 2020): 65, <https://doi.org/10.21043/qijis.v8i1.5629>.

¹² Duna Izfanna and Nik Ahmad Hisyam, "A Comprehensive Approach in Developing Akhlaq," *Multicultural Education & Technology Journal* 6, no. 2 (June 8, 2012): 77–86, <https://doi.org/10.1108/17504971211236254>.

¹³ J Jalaluddin et al., "Strengthening Character Education Values for Santris in Pondok Pesantren," *International Journal of Nusantara Islam* 9, no. 2 (2021), <https://doi.org/https://doi.org/10.15575/ijni.v9i2.16579>.

¹⁴ Omar Irfan et al., "Risk of Infection and Transmission of SARS-CoV-2 among Children and Adolescents in Households, Communities and Educational Settings: A Systematic Review and Meta-Analysis," *Journal of Global Health* 11 (July 17, 2021): 05013, <https://doi.org/10.7189/jogh.11.05013>.

learning methodologies, making the transition to digital learning even more challenging.^{15,16}

Digital platforms, such as the Zenius application, have emerged as valuable tools in Indonesia's new educational landscape. These platforms have facilitated the transition to remote learning, providing features that support student learning outcomes, exam simulations, and student assessment.^{17,18,19} However, the implementation of these platforms has not been without its challenges. Some students prefer face-to-face learning over digital platforms.²⁰ This suggests a need to explore integrating the benefits of digital and traditional learning to cater to different learning preferences.^{21,22} However, despite the significant strides made in adopting distance learning and digital platforms, traditional educational institutions like Pondok Pesantren face unique challenges due to their reliance on face-to-face learning and communal living arrangements, which pose additional risks regarding pandemic-era transmission.²³

Zenius, a popular online learning platform in Indonesia, played a crucial role during the pandemic in supporting home-based learning. An analysis of user perceptions of Zenius services, utilizing text mining techniques, revealed both appreciated and improvable aspects of the service. Features analyzed included live classes, trial services, learning materials, user accounts, and tutorial videos. Free learning access received high praise, with a satisfaction score of 93.75%, indicating significant user benefits during the pandemic. The learning materials also scored highly (92.04%), reflecting the quality of content that is understandable and comprehensive. However, the trial services and user account aspects received lower scores, indicating a need for improvements in these areas.

Zenius's contribution during the pandemic has been substantial, especially in providing free access to learning materials and high-quality content. However, there is room for improvement, particularly in trial services and user account management. Enhancements in these areas could provide users with a more comprehensive and satisfying learning experience.

¹⁵ Darren Turnbull, Ritesh Chugh, and Jo Luck, "Transitioning to E-Learning during the COVID-19 Pandemic: How Have Higher Education Institutions Responded to the Challenge?," *Education and Information Technologies* 26, no. 5 (2021): 6401–19, <https://doi.org/10.1007/s10639-021-10633-w>.

¹⁶ J Singh, K Steele, and L Singh, "Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World," *Journal of Educational Technology Systems* 50, no. 2 (2021): 140–71, <https://doi.org/10.1177/00472395211047865>.

¹⁷ A Agustini, I Muhd, and Khairurahimin, "Pembelajaran Online Sebagai Solusi Belajar Biologi Di Zaman Milenial," in *Prosiding Seminar Nasioal Biologi VI*, vol. 2, 2017, 174–79.

¹⁸ Fuad Anwar et al., "Inisiasi Implementasi Zenius Sebagai Aplikasi Pembelajaran Online Di SD Muhammadiyah Wonorejo," *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, Dan Seni Bagi Masyarakat)* 10, no. 2 (October 25, 2021): 162, <https://doi.org/10.20961/semar.v10i2.52163>.

¹⁹ D P Sari, "Pengaruh Media Pembelajaran Menggunakan Aplikasi Zenius Terhadap Hasil Belajar Siswa SMA Negeri 16 Kota Bekasi" (UIN Syarif Hidayatullah Jakarta, 2020), <https://repository.uinjkt.ac.id/dspace/handle/123456789/54460>.

²⁰ Agustini, Muhd, and Khairurahimin, "Pembelajaran Online Sebagai Solusi Belajar Biologi Di Zaman Milenial."

²¹ Antonia Bralić and Blaženka Divjak, "Integrating MOOCs in Traditionally Taught Courses: Achieving Learning Outcomes with Blended Learning," *International Journal of Educational Technology in Higher Education* 15, no. 1 (December 5, 2018): 2, <https://doi.org/10.1186/s41239-017-0085-7>.

²² Elena Makarova, "Effectiveness of Traditional and Online Learning: Comparative Analysis from the Student Perspective," ed. M. Vidrevich, *SHS Web of Conferences* 99 (March 8, 2021): 01019, <https://doi.org/10.1051/shsconf/20219901019>.

²³ Sébastien Goudeau et al., "Why Lockdown and Distance Learning during the COVID-19 Pandemic Are Likely to Increase the Social Class Achievement Gap," *Nature Human Behaviour* 5, no. 10 (September 27, 2021): 1273–81, <https://doi.org/10.1038/s41562-021-01212-7>.

In this context, the experiences of Madrasah Aliyah Pondok Pesantren Ali Maksum in Yogyakarta can provide valuable insights.²⁴ The pandemic has instigated a profound transformation in the education sector, with institutions like Madrasah Aliyah Pondok Pesantren Ali Maksum in Yogyakarta at the forefront of navigating this shift. Their experiences, particularly in implementing the Zenius application and adapting policy decisions during the crisis, offer critical insights into the challenges and opportunities of digital transformation in education. These insights are invaluable for Pondok Pesantren and the broader educational landscape, contributing significantly to our understanding of how digital platforms can shape education's future in times of crisis and beyond.²⁵

Digital platforms, such as Zenius, have played a significant role in this educational transformation. These platforms facilitated the transition to remote learning, offering features supporting various student learning aspects.²⁶ However, their implementation also revealed specific challenges, including students' preference for traditional learning methods over digital platforms.²⁷ This highlights a gap in understanding how to integrate the benefits of both digital and traditional learning to cater to diverse learning preferences.

The case of Zenius illustrates both the potential and limitations of digital platforms in education during the pandemic.²⁸ User feedback on Zenius services analyzed through text mining techniques, revealed high satisfaction levels with certain features, such as free learning access and quality of learning materials. However, aspects like trial services and user account management indicated areas needing improvement. These findings emphasize the necessity of ongoing assessment and enhancement of digital learning platforms to meet diverse educational needs.

Despite significant advancements in digital education, several limitations and gaps remain. The preference of some students for face-to-face learning highlights a crucial area for further research and development.^{29,30} Additionally, issues like the digital divide and internet accessibility, particularly in rural and underprivileged areas, pose significant

²⁴ Dian Uswatun Hasanah, Ahmad Alf, and Dwi Kurniasih, "Kebijakan Pendidikan Di Pondok Pesantren Al Muayyad Surakarta Selama Pandemi Covid-19," *JURNAL PENDIDIKAN ISLAM AL-ILMI* 4, no. 1 (May 1, 2021): 60–74, <https://doi.org/10.32529/al-ilmi.v4i1.780>.

²⁵ Víctor J García-Morales, Aurora Garrido-Moreno, and Rodrigo Martín-Rojas, "The Transformation of Higher Education After the COVID Disruption: Emerging Challenges in an Online Learning Scenario," *Frontiers in Psychology* 12 (February 11, 2021), <https://doi.org/10.3389/fpsyg.2021.616059>.

²⁶ Muhammad Nurul Mubin, "Pembelajaran Daring Pendidikan Agama Islam Di Masa Pandemi Covid-19 Di Sekolah Menengah Sederajat," *EUTAGOGIA: Journal of Islamic Education* 1, no. 1 (2021): 16–31, https://scholar.google.com/scholar_url?url=http://202.0.92.5/tarbiyah/HJIE/article/download/3915/2059&hl=en&sa=T&oi=gsb-gga&ct=res&cd=0&d=8675155342252416100&ei=M-2fYMDLLYvuygS1n6yADg&scisig=AAGBfm2H44Vl1XDCrmPcb8Nar1kjrFKNZA.

²⁷ Makarova, "Effectiveness of Traditional and Online Learning: Comparative Analysis from the Student Perspective."

²⁸ Goudeau et al., "Why Lockdown and Distance Learning during the COVID-19 Pandemic Are Likely to Increase the Social Class Achievement Gap."

²⁹ N Sintawana, D P Lazirkha, and S N Sari, "Pengaruh Media Pembelajaran Online Berbasis E-Learning Pada Aplikasi Zenius Terhadap Hasil Belajar Siswa SMA," *Jl-Tech* 16, no. 1 (2020), <https://jitech.i-tech.ac.id/index.php/jitech/article/view/101>.

³⁰ L Scheel, G Vladova, and A Ullrich, "The Influence of Digital Competences, Self-Organization, and Independent Learning Abilities on Students' Acceptance of Digital Learning," *International Journal of Educational Technology in Higher Education* 19, no. 1 (2022): 44, <https://doi.org/10.1186/s41239-022-00350-w>.

challenges.^{31,32} These issues are further complicated in communal living arrangements like those in Pondok Pesantren, necessitating tailored solutions for such unique educational settings.

This study focuses on the role of the Zenius application in facilitating distance learning at Madrasah Aliyah Pondok Pesantren Ali Maksum during the Pandemic era crisis. It aims to explore the institution's policy decisions and the use of Zenius in maintaining education quality amidst the crisis. The research will also delve into the broader implications of technology in fostering innovation and practical learning in challenging times. Ultimately, this study seeks to contribute to the discourse on distance learning and digital platforms in education, offering insights that could guide future strategies and policies in the face of ongoing and future crises.

2. Method

2.1. Research Design or Methodology

This study employed a qualitative research approach with a case study perspective, focusing on the impact of Zenius, a digital learning platform, at Madrasah Aliyah Pondok Pesantren Ali Maksum during the Pandemic era crisis. The research spanned over two months following lifting of the Public Activity Restrictions Enforcement (PSBB). Our methodological framework integrated a triangulated approach, including interviews, observations, and document analysis, to provide comprehensive insights into educational transformations.³³ This methodology allowed for an in-depth exploration of the subject matter, contributing vital nuances to the research outcomes.

2.2. Procedures

The study involved purposive sampling to select participants representing various roles in the educational process, including the School Principal, Vice Principal of Curriculum, representative teachers, students, and boarding students directly engaged in learning using Zenius at the institution. These participants were integral in offering diverse perspectives on the implementation and impact of the digital learning platform.

2.3. Tools and Technologies

The primary tools used in this study were digital platforms for interviews (Zoom and WhatsApp) and observational equipment. These tools facilitated direct and indirect data collection methods, ensuring versatility and adaptability in data gathering during the pandemic.

2.4. Data Collection and Analysis

Data collection combined direct methodologies, such as face-to-face and virtual interviews, and indirect methodologies, including on-site observations. Triangulation was employed to enhance the validity and robustness of the data, using multiple sources and techniques. The collected data were then analyzed through thematic analysis, identifying prominent themes and patterns in the interview transcripts, observational notes, and documents. This analysis was deductive, building on existing literature, and inductive, allowing for the emergence of new themes. The iterative process of coding, categorizing, and theorizing ensured the accuracy and depth of interpretation.

³¹ Anuradha Mathrani, Tarushikha Sarvesh, and Rahila Umer, "Digital Divide Framework: Online Learning in Developing Countries during the COVID-19 Lockdown," *Globalisation, Societies and Education* 20, no. 5 (October 20, 2022): 625–40, <https://doi.org/10.1080/14767724.2021.1981253>.

³² Yanasta Yudo Pratama et al., "Implementation of Health Protocols During Covid-19 Pandemic in Pondok Pesantren in The Special Region of Yogyakarta," *Jurnal Pengabdian Masyarakat Dalam Kesehatan* 4, no. 2 (December 28, 2022): 74–81, <https://doi.org/10.20473/jpmk.v4i2.37371>.

³³ John W Creswell and Timothy C Guetterman, "Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research," *Pearson*, 2019.

2.5. Reliability and Validity

Established research procedures were followed to ensure the study's reliability and validity, and triangulation methods were implemented. This approach facilitated the cross-verification of data and findings, enhancing the study's credibility.

3. Result and Discussion

3.1. Utilization of Zenius for Maintaining Educational Quality at Madrasah Aliyah Pondok Pesantren Ali Maksum during the Pandemic era

The Pandemic era crisis has severely impacted the global educational sector, necessitating the adoption of distance learning or online educational methods. Madrasah Aliyah Pondok Pesantren Ali Maksum, a distinguished Islamic boarding school, has responded to this challenge by leveraging technology for educational purposes. Specifically, they adopted Zenius, an online tutoring platform, to support their 12th-grade students' learning during the pandemic. While the use of media and technology to enhance educational activities is not new, the current pandemic has underscored their importance, driving further improvements fueled by technological advancements and internet connectivity.

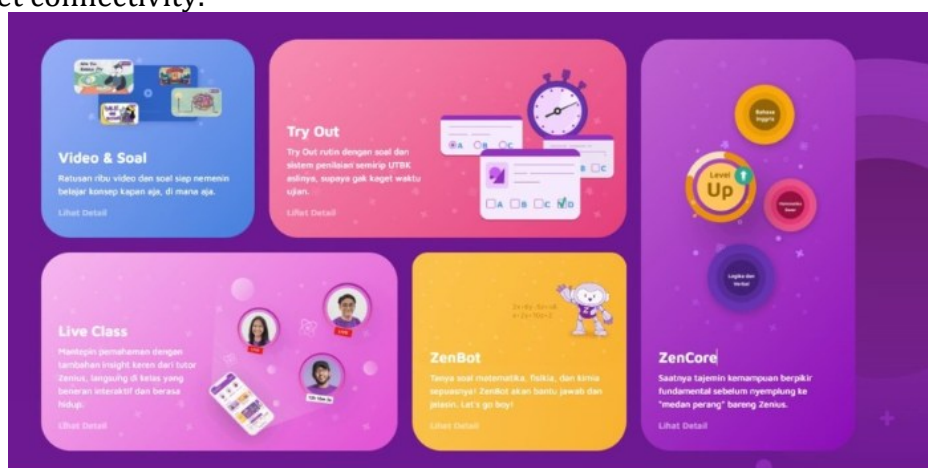


Figure 1. Zenius features in learning

Zenius, with its features like ZenBot, which allows students to upload question photos for assistance in Mathematics, Physics, and Chemistry, Zenius Live Class offering direct interaction with tutors for further discussion and understanding, a Content Library rich with over 100,000 educational materials in Mathematics, Science, and Social Studies, and ZenCore that develops fundamental skills, comprehensively supports the student learning process with an interactive and innovative approach.

The deployment of the Zenius online learning application at Madrasah Aliyah Pondok Pesantren Ali Maksum offers a significant example of educational technology adaptation during the pandemic-era crisis. This study explores how Zenius, an educational platform known for its vast library of over 80,000 free instructional videos, was effectively utilized in this unique educational setting, primarily in a data-efficient whiteboard format. A key feature of Zenius is its interactive capabilities, such as live teaching and live chat, which foster engagement between teachers and students.

Furthermore, the platform enables educators to create and distribute daily study plans, which are accessible to both students and their parents, thereby facilitating structured learning and allowing parents to track their child's educational progress. Notably, Zenius's participation in the 'Kuota Belajar' program, initiated by the Ministry of Education and Culture, helps alleviate the cost of internet usage for its users. This analysis focuses on assessing the effectiveness and challenges encountered in leveraging Zenius

as a pedagogical tool in the specific context of Madrasah Aliyah during the global health crisis, demonstrating a proactive response to the unprecedented educational challenges posed by the pandemic.

Historically, Madrasah Aliyah Pondok Pesantren Ali Maksum has been renowned for producing graduates who have successfully pursued further education at leading universities in Indonesia and abroad. The school provides counseling guidance programs to assist students in identifying their academic interests and potential areas of focus for tertiary education. Furthermore, it regularly organizes academic tutoring—locally called "bimbel"—to prepare 12th-grade students for national and computer-based written exams (UTBK).

Due to the COVID-19 pandemic, Madrasah Aliyah Pondok Pesantren Ali Maksum has restructured its tutoring activities. Initially, the school's internal teachers conducted these sessions, but online tutoring via Zenius was later introduced as a supportive measure. The pandemic necessitated the suspension of tutoring activities involving external tutors, leading to a renewed focus on internally conducted tutoring sessions, all carried out in compliance with health protocols.

Madrasah Aliyah Pondok Pesantren Ali Maksum exemplifies how an educational institution can innovatively leverage technology to support learning activities amidst a pandemic. Through its counseling guidance and structured tutoring activities, it has managed to maintain the quality of its education and uphold the standards of its graduates during these unprecedented times.

Table 1. Observations of the Tutoring Activities at Madrasah Aliyah Pondok Pesantren Ali Maksum during the Pandemic era.

Observation Aspect	Traditional Learning	Zenius Learning
Learning Mechanism	The teacher instructs in-person, adhering to health protocols	A mentor operates Zenius
Grade Level	All 12th-grade students	All 12th-grade students
Time	2:00 PM - 3:00 PM WIB (Western et al.)	8:30 PM - 10:00 PM WIB (Western Indonesian Time)
Student Grouping	Grouped based on interests and talents	Grouped based on interests and talents
Guidance Format	Traditional learning	Zenius-based learning

Every evening, Madrasah Aliyah Pondok Pesantren Ali Maksum conducts Zenius learning sessions from 20:30 to 22:00 WIB in classrooms specifically tailored to accommodate the diverse interests of each student. During these sessions, students are equipped with laptops, projectors, and guidance from an instructor. The learning process commences with the distribution of problem sets, which are downloaded and printed from the Zenius application. Students are then allotted time to solve these problems independently. Once completed, the answers are collectively reviewed and discussed. Finally, students watch instructional videos projected on a screen to clarify the underlying concepts further. As a result, Zenius learning at Madrasah Aliyah Pondok Pesantren Ali Maksum becomes more effective, leading to improved student learning outcomes.

Table 2. Observation Results of Zenius Media Utilization at Madrasah Aliyah Pondok Pesantren Ali Maksum

No	Observed Aspect	Observation Results
1	Zenius Media	Questions can be downloaded; the material is appealing and straightforward and facilitates an easy understanding of problem discussions.
2	Student Activities	Display enthusiasm for Video Explanations
3	Tutor's Ability	Some deficiencies in subject matter mastery

4	Student Response	Display interest in attempting practice questions and discussions
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Madrasah Aliyah Pondok Pesantren Ali Maksum High School has adopted Zenius as a supplementary learning medium for tutoring during the pandemic crisis. Observations suggest that Zenius' utilization has been largely effective, offering engaging learning materials and facilitating easy comprehension of problem discussions. However, a notable weakness lies in the tutors' ability to elucidate complex topics requiring detailed explanations.

The proactive strategy of Madrasah Aliyah Pondok Pesantren Ali Maksum in leveraging technology for tutoring deserves commendation, as it reflects their commitment to preserving educational quality and accessibility during the pandemic. This approach aligns with the Ministry of National Development Planning/Bappenas policy, which advocates for integrating technology in education to adapt to community and local conditions. Consequently, Madrasah Aliyah Pondok Pesantren Ali Maksum continues to uphold its educational quality, thereby nurturing graduates who are well-prepared for higher education.

3.2. The Impact of Zenius Online Tutoring on the Learning Quality of Madrasah Aliyah Pondok Pesantren Ali Maksum Students during pandemic crisis

Madrasah Aliyah Pondok Pesantren Ali Maksum, an Islamic boarding school, has adopted Zenius online tutoring to maintain the quality of education amidst the COVID-19 pandemic. With highly motivated students and adequate facilities, the school strives to develop students who excel academically and practically, preparing them for domestic and international higher education opportunities while instilling a foundation of faith and virtuous character.

Using Zenius as a supportive learning medium in Madrasah Aliyah Pondok Pesantren Ali Maksum has significant implications for sustaining the quality of education. This assertion is based on documented observations made by the author, specifically on the UTBK (University Entrance Test) scores of Madrasah Aliyah Pondok Pesantren Ali Maksum. These scores indicate a positive impact on the quality of learning resulting from incorporating Zenius as a tutoring resource.

Table 3. Documentation of the TOP 1000 schools based on UTBK scores in 2020 and 2021 for Madrasah Aliyah Pondok Pesantren Ali Maksum according to LTMPPT (National Test Agency for University Admission)

No	Year	Aspect	Average
1	2020	Quantitative Ability	506.928
		Reading Comprehension and Writing Skills	521.866
		General Reasoning Ability	515.980
		General Knowledge and Understanding	525.852
2	2021	Quantitative Ability	491.851
		Reading Comprehension and Writing Skills	514.175
		General Reasoning Ability	505.823
		General Knowledge and Understanding	511.070

Based on the average UTBK scores data provided in Table 2 for 2020 and 2021, it is essential to analyze the information further. A bar chart is presented below to facilitate this analysis. The data documentation indicates a slight decrease in the average UTBK scores across all sub-scores, which can be attributed to the limited guidance from mentors. While Zeniu's video explanations are valuable, not all students can comprehend the materials directly. Misunderstandings or misinterpretations of concepts may occur, mainly when the material requires more detailed and in-depth explanations. Hence, teacher guidance during Zenius learning is crucial in assisting students in understanding the material effectively.

Students' learning outcomes are influenced by two main elements: their abilities and contextual aspects, which can be categorized as internal and external factors. In order to assess the impact of a technology-based learning system like the Zenius application, it is crucial to consider the students' capacities. While the Zenius application offers several advantages, its emphasis on details can sometimes lead to slow progress and a lack of motivation among students.

Issues such as internet connectivity and using a single account for multiple classes can also contribute to declining learning quality when using Zenius. Moreover, students' packed schedules, without sufficient time for rest, may negatively affect their performance in exams like the UTBK. However, Madrasah Aliyah Pondok Pesantren Ali Maksum addresses these challenges by conducting daily tutoring activities, employing various learning models, and helping students better prepare for exams.

Research conducted at Madrasah Aliyah Pondok Pesantren Ali Maksum demonstrates that online learning using Zenius can effectively assist students and maintain the quality of education during the Pandemic era. Despite potential boredom during online learning, the continuous control of students' daily activities at Pesantren and enthusiasm for learning greatly influence their success. Additionally, Madrasah Aliyah Pondok Pesantren Ali Maksum utilizes appropriate teaching methods, instructional media, and school policies to ensure students remain focused on their studies. The research findings also indicate that alternative selection pathways like the National Selection for State Universities (SNMPTN) and the National Academic Achievement Selection for State Islamic Higher Education (SPAN-PTKAIN) significantly contribute to students' admission to higher education institutions. Therefore, Madrasah Aliyah Pondok Pesantren Ali Maksum can serve as a role model for other boarding schools in effectively utilizing technology-based instructional media and maintaining the quality of education during the pandemic.

3.3. Analisis of Assessing Zenius's Role in Sustaining Educational Quality at Madrasah Aliyah Pondok Pesantren Ali Maksum During Pandemic Era

The research aimed to evaluate the Zenius digital learning platform implementation at Madrasah Aliyah Pondok Pesantren Ali Maksum during the pandemic. Prior studies have highlighted the vital role of digital tools in educational continuity amidst crises.^{34,35} The current investigation builds on this body of work by focusing on an Islamic boarding school, a unique educational setting that traditionally relies on face-to-face instruction. The research question focused on whether the integration of Zenius could sustain educational quality under unprecedented disruptions. This study is significant in understanding the adaptability and effectiveness of digital platforms in maintaining educational standards in Islamic education settings.^{36,37}

The results of this study indicate that Zenius was successfully integrated into the educational framework of Madrasah Aliyah Pondok Pesantren Ali Maksum. Key features

³⁴ Akhmad Habibi et al., "Mapping Instructional Barriers during COVID-19 Outbreak: Islamic Education Context," *Religions*, 2021, <https://doi.org/10.3390/rel12010050>.

³⁵ Irwansyah Irwansyah, Nawir Yuslem, and M. Jamil, "Contemporary Fatwas of Al Washliyah Fatwa Council With Reference To Non-Muslim Leaders, Communism and Ahmadiyya," *MIQOT: Jurnal Ilmu-Ilmu Keislaman* 46, no. 2 (2022): 274–96, <https://doi.org/10.30821/miqot.v46i2.819>.

³⁶ Yusuf Hanafi et al., "The New Identity of Indonesian Islamic Boarding Schools in the 'New Normal': The Education Leadership Response to COVID-19," *Heliyon* 7, no. 3 (2021), <https://doi.org/10.1016/j.heliyon.2021.e06549>.

³⁷ Sita Aulia Rahmah, Siti Komariah, and Siti Nurbayani K., "Facing Online Learning Problems Through Character Building, a Teacher Strategy," *PEDAGOGIK: Jurnal Pendidikan* 8, no. 1 (2021): 123–55, <https://doi.org/10.33650/pjp.v8i1.2168>.

such as ZenBot, Zenius Live Class, and the comprehensive Content Library were pivotal in facilitating an interactive and innovative learning environment. This led to enhanced student engagement and effective utilization of instructional videos, corroborating previous findings on technology-enhanced learning environments.^{38,39} These findings are particularly noteworthy given the challenges posed by the pandemic, underscoring the potential of digital learning platforms to support educational activities in crisis situations.

These results, compared to previous research, support the notion that digital platforms can be effectively adapted to diverse educational contexts, including Islamic boarding schools.⁴⁰ The increased student engagement and enthusiasm increase align with prior studies suggesting that interactive and innovative tools can enhance learning experiences.⁴¹ This research adds to the existing literature by providing empirical evidence of the successful deployment of a digital learning platform in an Islamic education setting, highlighting the platform's versatility and effectiveness.

Contrastingly, this study's findings challenge the concerns raised in previous literature regarding technological, financial, and pedagogical barriers in online education within Islamic boarding schools.⁴² The successful integration of Zenius suggests that such barriers can be overcome with appropriate implementation strategies. However, it is crucial to recognize that this success may also be attributed to specific contextual factors unique to Madrasah Aliyah Pondok Pesantren Ali Maksum, such as administrative support and the existing technological infrastructure, which may not be generalizable to all Islamic educational institutions.

Zenius and other online educational approaches during the pandemic have maintained education quality despite challenges like unstable internet and lack of computer equipment. Zalat et al. (2021) highlighted this success, noting high student engagement and the development of academically talented graduates with strong moral and faith foundations prepared for higher education globally.⁴³ However, challenges exist, such as students' difficulties grasping material from Zenius video discussions, necessitating teacher support for better understanding. Li and Xue (2023) emphasize the influence of students' abilities and contextual factors, both internal and external, on learning outcomes.⁴⁴ While Zenius offers advantages, its detail-oriented learning system can hinder unmotivated students, and issues like internet connectivity and multi-class single account use can degrade learning quality. At Madrasah Aliyah Pondok Pesantren

³⁸ Arief Ardiansyah and Bagus Cahyanto, "Generative Learning Strategies to Improve Students' Cognitive Involvement in Online Classes at Islamic School: A Systematic Review," *Jurnal Pendidikan Agama Islam* 20, no. 1 (2023): 66–82, <https://doi.org/10.14421/jpai.v20i1.6329>.

³⁹ Muhammad Fajrul Alam Ulin Nuha, Ahmad Muklason, and Yosi Agustawan, "Enhancing Administrative Efficiency in Pondok Pesantren: Exploring the Acceptance of E-Santren App System for Administrative Tasks," *Procedia Computer Science* 234 (2024): 795–804, <https://doi.org/10.1016/j.procs.2024.03.096>.

⁴⁰ Hanafi et al., "The New Identity of Indonesian Islamic Boarding Schools in the 'New Normal': The Education Leadership Response to COVID-19."

⁴¹ Singh, Steele, and Singh, "Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World."

⁴² Pratama et al., "Implementation of Health Protocols During Covid-19 Pandemic in Pondok Pesantren in The Special Region of Yogyakarta."

⁴³ Marwa Mohamed Zalat, Mona Sami Hamed, and Sarah Abdelhalim Bolbol, "The Experiences, Challenges, and Acceptance of e-Learning as a Tool for Teaching during the COVID-19 Pandemic among University Medical Staff," ed. Gwo-Jen Hwang, *PLOS ONE* 16, no. 3 (March 26, 2021): e0248758, <https://doi.org/10.1371/journal.pone.0248758>.

⁴⁴ Jian Li and Eryong Xue, "Dynamic Interaction between Student Learning Behaviour and Learning Environment: Meta-Analysis of Student Engagement and Its Influencing Factors," *Behavioral Sciences* 13, no. 1 (January 9, 2023): 59, <https://doi.org/10.3390/bs13010059>.

Ali Maksum, however, twice-daily guidance with diverse learning models helps balance these issues, fostering a robust learning environment.

In the specific case of Madrasah Aliyah Pondok Pesantren Ali Maksum, Zenius, as an online learning tool, positively impacts student outcomes, as evident in UTBK scores. Sintawana et al., (2020). A slight dip in average scores was observed due to insufficient tutor guidance. Tutors must deeply understand the subject and provide clear, detailed explanations to enhance student comprehension.⁴⁵ Despite some students struggling with video content alone, the overall effect of Zenius is positive. Masril et al. (2021) and Pham et al. (2021) concur that technology-based learning success hinges on student capabilities and contextual elements, internal and external. While beneficial, Zenius's focus on details can overwhelm less motivated students, highlighting the need for balanced learning approaches.^{46,47}

The significance of this study lies in its demonstration of the practical application of online learning tools in a real-world educational context. The case of Madrasah Aliyah provides valuable insights into how digital platforms can maintain and potentially enhance educational quality in crises. While remaining true to its educational ethos, the school's approach to integrating technology offers a model for other institutions in similar circumstances. This study contributes to the broader educational discourse by highlighting the potential of platforms like Zenius in transforming educational practices during crises. It also emphasizes the importance of educator support and training in maximizing the benefits of digital education tools, ensuring they are effectively integrated into the learning environment.

The implications of this study extend beyond the immediate context of Madrasah Aliyah Pondok Pesantren Ali Maksum. They underscore the potential of digital platforms like Zenius in transforming educational practices, especially in crises. This research contributes to the broader discourse on education technology, emphasizing the need for flexible, adaptable, and student-centered learning environments. Moreover, it highlights the importance of ongoing support and training for educators to maximize the benefits of such platforms.

4. Conclusion

This research, centered on Madrasah Aliyah Pondok Pesantren Ali Maksum's utilization of the Zenius application during the pandemic, demonstrates digital platforms' pivotal role in sustaining educational quality in crisis situations. The study revealed how Zenius, with features like ZenBot, Live Classes, and an extensive Content Library, substantially supported and enhanced learning experiences for 12th-grade students. Despite the effective use of this platform, as evidenced by UTBK score analyses, challenges emerged, particularly in tutors' mastery of complex subjects and the necessity for more personalized guidance. These findings underscore the potential of educational technologies in transforming learning practices, emphasizing the need for adaptable, flexible environments and continuous educator support. However, the study's focus on a single institution and reliance on observational data limit its generalizability and depth

⁴⁵ Sintawana, Lazirkha, and Sari, "Pengaruh Media Pembelajaran Online Berbasis E-Learning Pada Aplikasi Zenius Terhadap Hasil Belajar Siswa SMA."

⁴⁶ M Masril et al., "Implementasi Media Pembelajaran Berbasis Teknologi Informasi Dan Komunikasi," *Edumaspul - Jurnal Pendidikan* 5, no. 2 (2021): 912–17, <http://repository.upiypk.ac.id/id/eprint/4616>.

⁴⁷ Thi Tinh Thuong Pham, Hoang Anh Le, and Doan Trang Do, "The Factors Affecting Students' Online Learning Outcomes during the COVID-19 Pandemic: A Bayesian Exploratory Factor Analysis," ed. Ehsan Namaziandost, *Education Research International* 2021 (October 8, 2021): 1–13, <https://doi.org/10.1155/2021/2669098>.

in assessing the nuanced impacts of such platforms. Future research should broaden its scope to multiple institutions and include qualitative analyses to understand technology-based learning tools comprehensively. This study, therefore, highlights the importance of integrating technology in education, especially during crises, and its implications for educational policy and practice, advocating for ongoing innovation and adaptation in educational methodologies.

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