



LEARNING INNOVATION OF ISLAMIC RELIGIOUS EDUCATION TECHNOLOGICAL APPROACH: IMPLICATIONS FOR ISLAMIC EDUCATION IN GORONTALO

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Abstrak

Penelitian ini bertujuan untuk memetakan tren inovasi pembelajaran berbasis teknologi pada pembelajaran Pendidikan Agama Islam serta mengkaji implikasinya terhadap pendidikan Islam di Gorontalo. Metode penelitian *Systematic Literature Review* diterapkan dengan mengikuti protokol PRISMA, melalui Google Scholar, Garuda, SINTA, dan DOAJ untuk periode tahun 2020-2026. Penelusuran menghasilkan 34 artikel, yang terdiri dari 21 artikel dari jurnal yang terakreditasi SINTA (SINTA 2-5) dan 13 artikel dari jurnal nasional. Hasil penelitian menunjukkan tren inovasi pada topik Sejarah Kebudayaan Islam mendominasi literatur (29%), mata pelajaran Al-Qur'an Hadis menjadi topik yang paling sedikit diteliti (9%). Dari segi komponen keinovasian kecenderungan pada media pembelajaran berbasis gamifikasi melalui Kahoot, Quizizz, dan Blooket serta lainnya, sementara inovasi pada tingkat kebijakan dan kurikulum masih sangat terbatas. Secara implikasi keinovasian pada pendidikan Islam di Gorontalo telah memiliki landasan digital melalui *Madrasah Digital Report* dan aplikasi Pusaka, namun pemanfaatannya untuk inovasi pedagogis pada mata pelajaran PAI khususnya Al-Qur'an Hadis masih kurang dan dapat dikembangkan lebih lanjut. Penelitian ini menyimpulkan bahwa pengembangan di masa depan perlu melampaui praktik kelas yang berpusat pada media menuju integrasi kebijakan dan kurikulum yang terstruktur.

Kata Kunci: Inovasi, Pembelajaran Berbasis Teknologi, Pendidikan Agama Islam.

Abstract

This study aims to map the trend of technology-based learning innovations in Islamic Religious Education learning and examine its implications for Islamic education in Gorontalo. The Systematic Literature Review research method is applied by following the PRISMA protocol, through Google Scholar, Garuda, SINTA, and DOAJ for the period 2020-2026. The search yielded 34 articles, consisting of 21 articles from SINTA-accredited journals (SINTA 2-5) and 13 articles from general national journals. The results of the study show that the innovation trend on the topic of Islamic Cultural History dominates literature (29%), the subject of Al-Qur'an Hadith is the least researched topic (9%). In terms of the innovation component, the tendency is towards gamification-based learning media through Kahoot, Quizizz, and Blooket while innovation at the policy and curriculum level is still very limited. By implication, innovation in Islamic education in Gorontalo already has a digital foundation through the *Madrasah Digital*

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Report and the Pusaka application, but its use for pedagogical innovation in PAI subjects, especially the Qur'an Hadith, is still lacking and can be further developed. This study concludes that future development needs to go beyond media-centered classroom practices towards the integration of structured policies and curricula.

Keywords: Innovation, Technology-Based Learning, Islamic Religious Education.

I. Introduction

Islamic Religious Education (PAI) plays a strategic role in shaping the character, morals, and spirituality of students in the midst of an increasingly massive digital transformation flow (Hasan, 2021). At the madrasah level, PAI is not taught as a single, undifferentiated subject; it is divided into four complementary subjects Qur'an Hadith, Moral Faith (Akidah Akhlak), Fiqh, and Islamic Cultural History (SKI) each with distinct material characteristics ranging from textual memorization and normative-affective content to narrative-historical content. Because these characteristics differ substantially, a single, uniform approach to technological innovation cannot be applied equally across all four subjects; a strategy that works well for visualizing historical narrative in SKI, for instance, is not necessarily suitable for strengthening Qur'anic memorization. In the era of Society 5.0 and the rapid adoption of artificial intelligence in education, the demand for technology-based learning innovation tailored to the specific character of each PAI subject has become increasingly urgent (Ambiani, 2025; Hadi, 2025).

The innovation in question is not only about learning media. The scope is broader, including policies and curriculum, learning tools, digital application-based evaluations, learning models and strategies, teaching approaches and techniques, and even icebreakers that are packaged digitally (Iffah, 2024). Various studies have shown that the use of technology such as augmented reality in Fiqh learning (Syamsiyah, 2025), gamification through Kahoot (Azizah & Ritonga, 2023), Quizizz (Lubis, 2026), and Blooket (Aisyah & Jasiah, 2025), to the use of artificial intelligence for personalization of SKI learning (K. Nisa, 2025) Despite this, the findings are still scattered across studies with diverse focuses and contexts. Until now, there are still limited studies that systematically map the trend of technology-based PAI learning innovations in all PAI subject groups and integrate these findings into a complete framework. In the context of Gorontalo, this kind of study is important because it can provide an overview of the direction of the development of technology-based PAI learning innovations that are relevant to efforts to develop Islamic education in the region.

This fragmentation matters because, without a comprehensive synthesis, it is difficult to know which PAI subjects, education levels, and innovation components have received adequate scholarly attention and which remain neglected information that is essential for directing future research and policy investment. The urgency is further amplified in regional contexts such as Gorontalo, where madrasahs have already begun to establish a digital foundation through the Madrasah Digital Report Card and Pusaka Superapps (Kementerian Agama Republik Indonesia, 2024; Najmiah Molou & Paulus, 2026), and through extracurricular initiatives such as digital

Qur'anic media integration at MIT Al Ishlah Gorontalo (Huljannah, 2025). Yet whether and how these regional digital infrastructures connect to the national trend of technology-based PAI innovation particularly in relation to pedagogical practice inside the four PAI subjects has never been examined, leaving a gap between what is happening administratively in Gorontalo and what is known about classroom-level innovation nationally.

Based on this review, at least two gaps in the existing literature can be identified. First, in terms of scope, no study has yet conducted a systematic literature review that simultaneously covers all four PAI subject's Qur'an Hadith, Akidah Akhlak, Fiqh, and SKI and maps the full range of innovation components, from learning media to policy and curriculum, within a single, comparable framework; existing studies tend to examine a single subject, a single technology, or a single innovation component in isolation. Second, in terms of context, no prior study has connected national-level findings on technology-based PAI innovation to a specific regional case, so it remains unclear how nationally identified trends, benefits, and challenges relate to the actual digital readiness of a particular region such as Gorontalo. This is precisely where the novelty of this study lies: through a Systematic Literature Review following the PRISMA protocol applied to 34 national-scope articles, this study synthesizes technology-based learning innovation across all four PAI subjects into one integrated map of trends, components, benefits, and challenges, and subsequently interprets that map in light of Gorontalo's specific digital and pedagogical context an integration that, to the researcher's knowledge, has not been undertaken in prior studies and therefore constitutes the original contribution of this article.

This study aims to map the trend of technology-based learning innovation across the four PAI subjects and to examine its implications for the development of Islamic education in Gorontalo. To achieve this aim, the study is guided by four research questions: (1) what is the publication trend of technology-based learning innovation in PAI subjects in Indonesia; (2) what components and types of technology are most widely used; (3) what benefits and challenges are most commonly reported; and (4) how relevant are these findings to the development of PAI learning in Gorontalo. By answering these questions, this study is expected to offer a more comprehensive picture of technology-based PAI learning innovation one that extends beyond learning media to other supporting components while also serving as an academic reference and a consideration for policy development, learning practice, and quality improvement of Islamic education in Gorontalo.

II. Research Methodology

This study uses the Systematic Literature Review approach with reference to the PRISMA protocol or Preferred Reporting Items for Systematic Reviews and Meta-Analyses, which provides a four-stage framework for the selection process, namely identification, screening, eligibility, and included (Kenzie, 2021),. Search and filtering are done by a single author. At the search strategy stage, searches are carried out through four databases, namely Google Scholar, Garuda, SINTA, and DOAJ, for

publication in 2020–2026. Keywords are arranged in stages to cover learning components in a wide range, not just media, ranging from learning innovations, models, evaluations, curriculum, policies, strategies, approaches, techniques, to ice breaking, each of which is combined with the name of the subject of Fiqih, Moral Faith, Al-Qur'an Hadith, or Islamic Cultural History along with the word technology. Inclusion and Exclusion Criteria. The article selection criteria are designed to ensure relevance and accountability of sources, as summarized in Table 1.

Table 1. Article Inclusion and Exclusion Criteria

Aspects	Inclusions	Exclusion
Topics	Discussing technology-based learning innovations in PAI subjects	Doesn't involve any technological elements at all
Subjects	One or more of Fiqih, Moral Faith, Al-Qur'an Hadith, SKI	Subjects outside the PAI family
Publication Type	National journal articles, indexed by Google Scholar/Garuda, peer-review process clear	Thesis/thesis not published journals, community service reports, unverified sources
Levels	Elementary/MI to SMA/MA/SMK equivalent (free)	Not valid
Availability	Full text available, methodology clear	Just abstract, unclear methodology
Year of Publication	2020–2026	Outside of the year range

The screening procedure follows the four stages of PRISMA. Of the initial 134 recordings, 23 duplicates were removed leaving 111 articles; After screening titles and abstracts, 60 of them were deemed irrelevant and 51 candidates remained. At the eligibility assessment stage, the full-text manual verification left out 17 more articles, two because they were outside the year range, two were not primary research, eight because the journals were unclear at the initial screening, four could not be verified, and one duplicated content. The end result was 34 articles that went into the synthesis stage.

Data Extraction and Classification, each article is extracted with data, including authors, years, subjects, innovative learning components, levels, types of technology, and journal names. The accreditation of each journal is then manually re-verified through the official SINTA website, then the articles are differentiated into the main sources, namely journals that have been verified to be accredited by SINTA 2 to 5 and are used as the basis for findings, as well as supporting sources, namely journals that have not been accredited but still pass the inclusion criteria and are used as complements. Of the 34 articles, 21 (62%) have the status of primary sources and 13 (38%) supporting sources. The classified data was then analyzed thematically to see patterns across subjects and compile their implications for the Gorontalo context.

III. Findings and Discussion

A. Research Findings

The search results of the 34 articles studied, including authors, journals, subjects, levels, and types of technology used, are presented in Table 2.

Table 2. Summary of Articles Reviewed

No	Author	Journal (Accreditaion)	Subjects	Level	Type Technology
1	Musyaffak, A.B. & Waqfin, M.S.I. (2023)	ISLAMIKA (SINTA 3)	Fiqih	MA	ICT
2	Nasrullah, A. & Waqfin, M.S.I. (2023)	ISLAMIKA (SINTA 3)	Fiqih	MA	ICT
3	Syamsiyah, P.E.N., Burhanuddin, H., & Nisa, I.F. (2025)	Advances in Education Jour.. (Belum SINTA)	Fiqih	MTs	Augmented Reality
4	Fahran Fahreza, Afifa Nurhaliza, Hanina Najma Adzkia, Fikron Yunus, Abdul Fadhil, (2025)	Advances in Education Jour.. (Belum SINTA)	Fiqih	Junior High School	ICT/Multimedia
5	Erna Nur Ma'sumah, Nanik ernawati, Yuni vara Awalya. (2024)	Social Science Academic (SINTA 4)	Fiqih	MI	Information Technology
6	Rosalina, D., Sari, S.M., Arifi, R.Z., & Azis, A. (2024)	At-Tarbiyah: Jurnal Peneli.. (Belum SINTA)	Fiqih	MA	Linktree, Canva, Quizizz
7	Sa'adah, N.M.S. & Agustina, U.W. (2024)	Al-Furqan: Jurnal Agama, S.. (Belum SINTA)	Fiqih	MA	ICT (Special Educational Media)
8	Jannah, M. & Cahyadi, A. (2023)	Al-Madrasah: Jurnal Pendid.. (SINTA 4)	Akidah Akhlak	MI	ICT-based simulation
9	Anuli, W.Y. (2020)	The Teacher of Civilizatio.. (Belum SINTA)	Akidah Akhlak	MA	Quipper School
10	Arianda, M.T., Derta, S., Okra, R., & Musril, H.A. (2024)	PETIK: Jurnal Pendidikan T.. (SINTA 4)	Akidah Akhlak	MA	Android (Kodular)
11	Lubis, W. (2026)	An-Nuha: Jurnal Pendidikan.. (Belum SINTA)	Akidah Akhlak	MTs	Quizizz
12	Nisa Alia Anshora, Retno Triboelandari. (2025)	Idarah Tarbawiyah: Journal.. (SINTA 3)	Akidah Akhlak	MA	Gamification quiz

No	Author	Journal (Accreditaion)	Subjects	Level	Type Technology
13	Siti Nur Aisyah, Jasiah. (2025)	At-Tarbiyah: Jurnal Peneli.. (Belum SINTA)	Akidah Akhlak	Junior High School	Blooket
14	Purnama, Y., Salim, A., & Mastur, M. (2022)	J-Instech (SINTA 5)	Al-Qur'an Hadits	Junior High School /MTs	Interactive multimedia
15	Hanum, L. (2021)	Fitrah: Journal of Islamic.. (SINTA 2)	Al-Qur'an Hadits	MTs	Online learning
16	Nabila Orin Nisa, Naili Nur Eliza, Lailani Lili Islami, Minhatir Rohmah, Nadya Komahnesi, Rohalinda Meyliana, Dian Rifiyati. (2026)	Jurnal Ihsan: Jurnal Pendi.. (SINTA 5)	SKI	MI	Virtual Reality (VR)
17	Athiyyaturrahmah & Zainab, N. (2024)	Nusantara: Journal of Peda.. (SINTA 4)	Al-Qur'an Hadits	MTs	Digital teaching materials
18	Nisa, K., Lahitania, Z., Maslahah, H. M. A., & Nikmah, F. (2025).	Realita: Jurnal Penelitian.. (SINTA 4)	SKI	MA	Artificial Intelligence
19	Muflihah, M. & W, D.M.A.P. (2024)	Jurnal Pendidikan dan Pemb.. (SINTA 3)	SKI	MTs	Smart TV
20	Fauziah, Z., Shofiyuddin, A., & Rofiana, H. (2022)	Madinah: Jurnal Studi Islam (SINTA 3)	SKI	MTs	Canva
21	Aidah, L.S. & Ali, M. (2024)	Didaktika: Jurnal Kependid.. (SINTA 3)	SKI	MA	Digital learning platform
22	Ma'rufi, M.M., Hafidz, & Nashihin, H. (2024)	Saliha: Jurnal Pendidikan .. (SINTA 4)	SKI	MTs	Digital learning media
23	Suryaningsih, F. & Khumaira, F. (2025)	Educational Note (Belum SINTA)	SKI	MA	Digital media (historical reconstruction)
24	Fauzan, R., Nizami, S. A., Trihadi, F., Syarif, A., Putri, A., & Fahmi, A. N. (2025).	Advances in Education Jour.. (Belum SINTA)	SKI	Senior High School	Gamification
25	Rosmina Jumati. (2024)	JUANGA: Jurnal Agama dan I.. (Belum SINTA)	SKI	MA	Model digital

No	Author	Journal (Accreditaion)	Subjects	Level	Type Technology
26	Azizah, S. & Ritonga, A.A. (2023)	Jurnal Edukasi Religia (JE.. (SINTA 3)	SKI	MA	Kahoot!
27	Herlambang (2026)	Instructional Development .. (SINTA 3)	Fiqih	MTs	Zeepquiz
28	Kartika, L., Novianti, W., & Nizar, M. A. K. (2024)	At-Tarbiyah: Jurnal Peneli.. (Belum SINTA)	PAI	Senior High School	Quizizz
29	Iffah, I., Supriadi, U., & Fakhruddin, A. (2024)	Jurnal Riset dan Inovasi P.. (SINTA 4)	PAI	Junior High School	TikTok
30	Hasan, M. (2021)	Jurnal Inovasi Pendidikan (Belum SINTA)	Curriculum	All Levels	Technology integration policy
31	Hadi, H., Muhammad, & Al Idrus, A. J. (2025).	Jurnal Ilmiah Pendidikan C.. (SINTA 4)	PAI	Senior High School	Digital learning
32	Syifaul Karima, Agus Pahrudin, Agus Jatmiko, Koderi, Imam Syafe'i. (2025)	Pendas: Jurnal Ilmiah Pend.. (SINTA 4)	PAI	All Levels	Integration of learning technology
33	Ambiani, J., dkk. (2025)	Jurnal Penelitian Ilmu Pen.. (SINTA 5)	PAI	All Levels	Difusi & Implementation Technology
34	Nasri (2023)	EDUSAINS: Journal of Educa.. (Belum SINTA)	PAI	Elementary	Gamification

The distribution of publications per year shows a steadily increasing trend, especially in the period 2023–2025, as presented in Figure 1. The significant surge in the 2024–2025 period, which covers 21 out of 34 articles or 62% of the total, indicates that academic interest in technological innovation in PAI subjects has only really developed in the last two years, in line with the acceleration of the adoption of generative artificial intelligence and digital learning platforms in general in Indonesia.

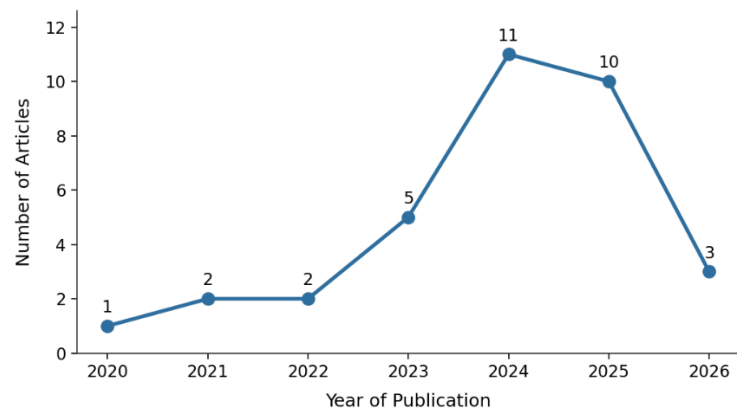


Figure 1. Trends in the number of publications per year (2020–2026)

In terms of source quality, as shown in Figure 2, most of the articles (62%) come from journals that have been verified to be SINTA accredited at levels 2 to 5, while the remaining 38% have not been accredited but still meet the inclusion criteria as supporting sources.

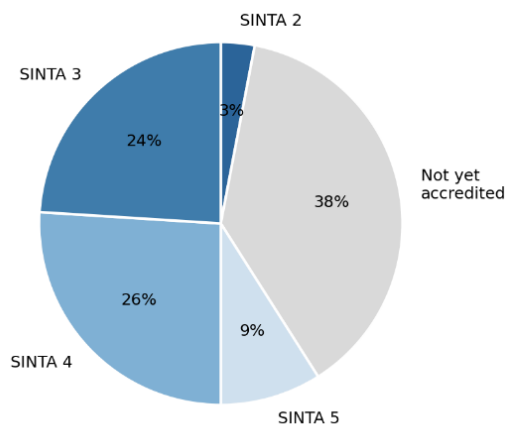


Figure 2. Distribution of SINTA accreditation status

Integrated Learning Components, Subjects, and Levels

In terms of education level (Figure 3), the most research innovation was at the Madrasah Aliyah level with 12 articles or 35% of the total, followed by Madrasah Tsanawiyah with eight articles or 24%. The elementary level, namely Madrasah Ibtidaiyah and Elementary School, together only includes four articles or 12% of the total, showing that technological innovations in PAI subjects are still more experimented at the upper secondary level than at the elementary level.

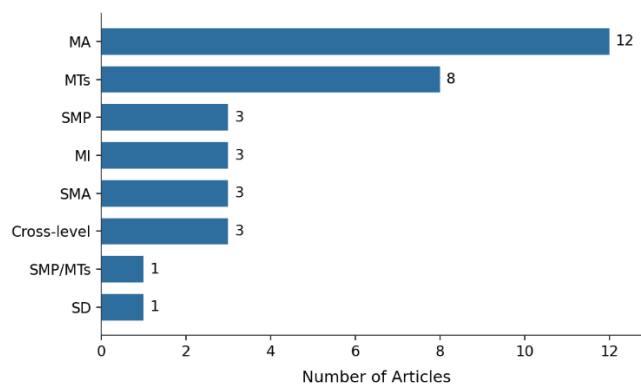


Figure 3. Distribution of articles per level of education

The history of Islamic culture is the most researched subject, as seen in Figure 4, possibly because its narrative-historical material is suitable for visualization with media such as virtual reality, artificial intelligence, and digital platforms. On the other hand, the Qur'an Hadith is the subject with the least literature, which indicates a research gap in this subject, possibly because the characteristics of the textual memorization material are considered to require less visual innovation than other subjects.

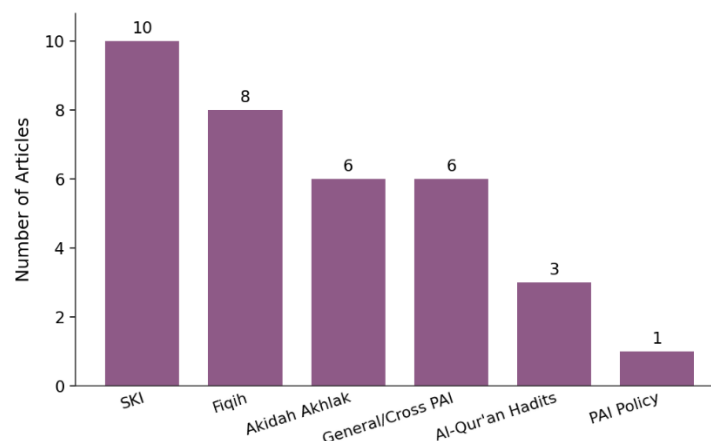


Figure 4. Distribution of articles by subject

The classification of the innovative learning components in the 34 articles is presented in Figure 5 and shows the dominance of learning media, which accounts for half of the total articles when combined with the variety of media and evaluation as well as media and devices. These findings confirm the initial observation of the study that the literature is still highly concentrated on the media component, while the policy and curriculum components, evaluation, and strategies and approaches, although they are emerging, are still much less studied in depth.

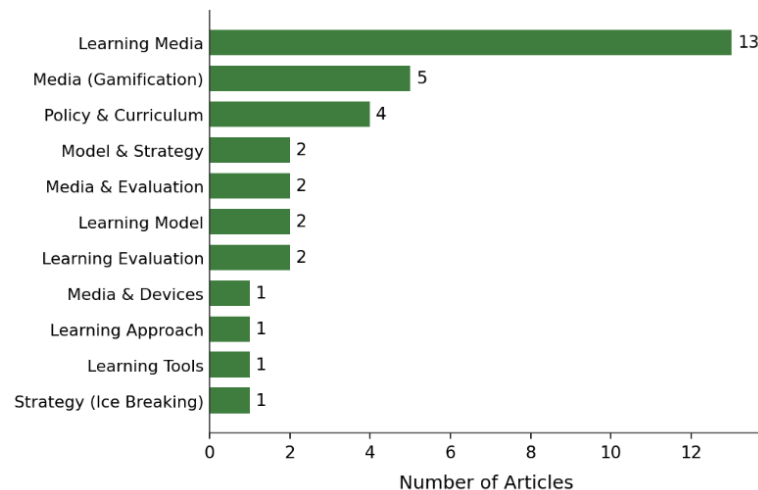


Figure 5. Distributed of innovative learning components

One of the most consistent findings in the study was gamification, which appeared in nine of the 34 articles or 26% of the total and was spread across almost all subjects, as presented in Table 2. Interestingly, no gamification-themed articles on the subject of the Qur'an Hadith were found in this dataset, complementing the previous finding that this subject had the least technological innovation in general.

Table 3. Cross-Subject Gamification Applications

Subjects	Aplication
Fiqih	Quizizz, Canva, Linktree; Zeepquiz
Akidah Akhlak	Quizizz; Quiz Puzzle Maker; Blooket
SKI	Kahoot!; Gamification APP's
PAI	Quizizz

Benefits and Challenges Found

A synthesis of various articles shows the three most commonly found benefits. The most consistent ones emerged were increased motivation and interest in learning, especially in gamification studies using Quizizz, Kahoot, and Blooket, as well as interactive media such as Canva and Linktree. Another benefit that is widely mentioned is the ability of the media to visualize abstract concepts, especially in augmented reality and virtual reality studies in Fiqih subjects on slaughter materials and SKI on Isra Mi'raj materials, where students find it easier to understand events or procedures that are difficult to imagine only through text. In addition, platforms such as Google Forms, Quizizz, and Blooket have also been found to make it easier for teachers to conduct formative assessments faster and more attractive to students.

Although the benefits are widely found, some challenges also arise in the literature reviewed. These challenges include infrastructure gaps in the form of uneven access to internet and devices in suburban madrasas, uneven readiness of teachers' digital competencies, and a lack of research at the policy and curriculum level compared to

the classroom practice level, which means that innovation occurs. It is often an individual initiative of the teacher, not a systematic institutional policy.

B. Discussion

Innovation Trends and Components

The results of this SLR confirm that technology-based PAI subject learning innovations in Indonesia have accelerated significantly since 2023, with the dominance of learning media components and gamification approaches that have emerged across almost all subjects. However, inequality is also evident, namely the subjects of the Qur'an Hadith and the policy and curriculum components are still very minimally researched compared to the SKI subjects and the media component. This pattern is in line with the trend of Islamic education research in Indonesia, which is generally more interested in innovation at the level of classroom practice than at the level of institutional policy (Ambiani, 2025).

Benefits and Challenges in a Theoretical Perspective

The dominance of benefits in the form of increased learning motivation and ease of visualization of abstract concepts is in line with the basic principles of gamification and interactive media, which work through instant feedback and game elements to hold students' attention to material that was previously memorized or abstract. This pattern also explains why Kahoot, Quizizz, and Blooket consistently appear across subjects: the apps are relatively inexpensive, easy for teachers to operate, and their impact on student engagement is felt in a single meeting. On the other hand, the challenges in the form of infrastructure gaps and teachers' digital competencies that are repeated in the literature indicate that the success of innovation at the classroom level has not been supported by strengthening at the system level, so that the good practices that emerge tend to be individual teacher initiatives and are vulnerable to unsustainable without policy support or structured training.

Implications for the Development of Islamic Education in Gorontalo

Contextualized with the condition of Gorontalo, the digital foundation of madrasas in this region has actually begun to be built, although it is still concentrated at the administrative level through Pusaka Superapps and Madrasah Digital Report Cards (Kementerian Agama Republik Indonesia, 2024; Najmiah Molou & Paulus, 2026), and extracurricular level through the integration of Qur'anic digital media at MIT Al Ishlah Gorontalo (Huljannah, 2025). This condition shows that the seeds of innovation in the realm of the Qur'an, which are the least researched nationally, have actually grown in Gorontalo even though it is not yet within the framework of the formal curriculum of PAI. At the same time, the Head of the Regional Office of the Ministry of Religion of Gorontalo Province admitted that the digital literacy of madrasah teachers is still low (Kantor Wilayah Kementerian Agama Provinsi Gorontalo, 2026). In line with the challenges of teacher competence which were also identified in the findings.

For the development of PAI learning in Gorontalo, this finding opens up two concrete opportunities. The digital foundations that already exist at the administrative and extracurricular levels have the potential to be directed directly to pedagogical

innovations in the formal curriculum, with gamification as a realistic entry point because it has proven to be effective in other areas with similar resource limitations and does not require infrastructure investment as much as augmented reality or virtual reality (Azizah & Ritonga, 2023; Lubis, 2026). In addition, given the emphasis on local policies on strengthening the Qur'an and Hadith as well as pioneering practices that already exist at the extracurricular level, Gorontalo has the potential to become a national pilot locus for innovation in subjects that are the least researched nationally.

IV. Conclusion

This study employed a Systematic Literature Review (SLR) approach to synthesize findings from 34 articles, comprising 21 articles published in SINTA-accredited journals (SINTA 2–5) and 13 articles published in general national journals, in order to answer the four research questions formulated in this study. *First*, the trend of publications regarding technology-based learning innovations in Islamic Religious Education subjects in Indonesia the majority of the reviewed articles 21 out of 34 (62%) were published in recent years. However, this trend is uneven across the various subjects: the History of Islamic Culture (SKI) attracted the most attention with 10 articles (29%), whereas the Qur'an and Hadith subject was the least researched, with only 3 articles (9%). *Secondly*, in terms of components and types of technology, articles or studies highlighting innovation are dominated by gamification specifically through platforms like Kahoot, Quizizz, and Blooket as the approach most consistently applied across various subjects, whereas innovations regarding policy and curriculum approaches remain limited. *Third*, in terms of benefits and challenges, the most frequently found benefits are increased learning motivation and the ease of visualizing abstract concepts, whereas the main challenges are the gap in infrastructure and the uneven digital competence of teachers. *Fourth*, in the context of Gorontalo, the region's digital foundation has so far largely developed at the administrative level through Pusaka Superapps and the Madrasah Digital Report Card, and at the extracurricular level through digital Quran media. The synthesized findings indicate that opportunities for pedagogical innovation in Islamic religious education subjects remain wide open for development. This study concludes that future development needs to move beyond media-centered classroom practices to a structured integration of policy and curriculum.

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