

## The Use of the Ruang Belajar Application as a Supporting Tool for Creative Islamic Religious Education (PAI) Learning Strategies at SMAN 1 Yosowilangun

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<b>Abstract</b>	
<p>This study aims to analyze of the use of the Ruang Belajar Application (Rubel) as a support for creative Islamic Education (PAI) learning strategies at SMAN 1 Yosowilangun. This research employed a qualitative approach, with data collected through observation, interviews, documentation, and supported by survey data from 242 twelfth-grade students. Data analysis was conducted through data reduction, data display, and conclusion drawing. The results indicate that the use of the Rubel Application has a positive impact on the PAI learning process, as reflected in increased student engagement, interest, and understanding. Learning becomes more interactive and varied through the integration of text, video, and project-based assignments. The implementation of the MODERAT learning strategy (Muhasabah, Observation, Deepening Material, Elaboration, Actualization Space, Affirmation and Reflection, and Competency Test) effectively organizes the learning process in a structured manner and encourages active student participation. However, challenges were identified, including limited internet access and varying levels of students' digital literacy. To address these issues, adaptive strategies such as hotspot sharing and collaborative group work were implemented. In conclusion, the Ruang Belajar Application functions not only as a learning medium but also as an integrated system that supports the development of creative, flexible, and student-centered PAI learning strategies.</p>	<p><b>Keywords:</b> Ruang Belajar Application; Islamic Religious Education; Learning Strategy.</p>

<b>Abstrak</b>	
<p>Penelitian ini bertujuan untuk menganalisis dinamika penggunaan Aplikasi Ruang Belajar (Rubel) sebagai penunjang strategi pembelajaran Pendidikan Agama Islam (PAI) yang kreatif di SMAN 1 Yosowilangun. Penelitian ini menggunakan pendekatan kualitatif dengan teknik pengumpulan data melalui observasi, wawancara, dokumentasi, serta didukung data survei terhadap 242 peserta didik kelas XII. Analisis data dilakukan melalui tahapan reduksi data, penyajian data, dan penarikan kesimpulan. Hasil</p>	<p><b>Kata Kunci:</b> Aplikasi Ruang Belajar; Pembelajaran PAI; Strategi Pembelajaran.</p>

penelitian menunjukkan bahwa penggunaan Aplikasi Rubel memberikan dampak positif terhadap proses pembelajaran PAI, ditandai dengan meningkatnya keterlibatan, minat, dan pemahaman peserta didik. Pembelajaran menjadi lebih interaktif dan variatif melalui integrasi teks, video, dan tugas berbasis proyek. Strategi pembelajaran berbasis alur MODERAT (Muhasabah, Observasi, Dalami Materi, Elaborasi, Ruang Aktualisasi, Afirmasi dan Refleksi, serta Tes Kompetensi) terbukti mampu mengorganisasi pembelajaran secara sistematis serta mendorong partisipasi aktif peserta didik. Meskipun demikian, terdapat kendala berupa keterbatasan akses internet dan variasi kemampuan digital peserta didik. Untuk mengatasi hal tersebut, dilakukan strategi adaptif seperti penggunaan hotspot dan kerja kelompok. Dengan demikian, Aplikasi Ruang Belajar tidak hanya berfungsi sebagai media pembelajaran, tetapi juga sebagai sistem yang mendukung pengembangan strategi pembelajaran PAI yang kreatif, fleksibel, dan berpusat pada peserta didik.

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## 1. Introduction

The development of information and communication technology has had a significant impact on the education system in Indonesia. The digitalization of education has encouraged a shift in the learning paradigm from conventional approaches toward forms of learning that are more open, flexible, and oriented toward the utilization of technology. (Ghazy et al., 2025). In recent years, the use of digital learning applications has become increasingly widespread across various educational institutions, both as a complement to face-to-face instruction and as the primary medium in online learning. This condition requires educators to adapt their learning strategies so that they remain relevant to the characteristics of learners and the demands of contemporary developments. (Husna, 2024).

In the context of secondary education, the use of digital learning applications based on learning spaces has become one form of adaptation to the demands of twenty-first-century learning. Such applications make it possible to create a learning environment that is more open, flexible, and student-centered. Through the use of this technology, teachers can develop more creative learning strategies by integrating various learning resources, collaborative activities, and learning reflection within a single structured platform (Widiyan et al., 2025). This condition requires educators to possess adequate pedagogical and digital competencies so that the technology employed functions not merely as an administrative aid, but truly as an integral part of the learning strategy (Dzulkifli Muhajir et al., 2025).

Islamic Religious Education (PAI) is a subject that plays a strategic role in shaping students' character, religious attitudes, and moral values. PAI instruction is directed not only toward the cognitive acquisition of religious knowledge, but also toward the process of internalizing Islamic values as reflected in students' attitudes, behavior, and ways of thinking in their daily lives. Accordingly, the

success of PAI learning is largely determined by the teacher's ability to design instructional strategies that are capable of integrating cognitive, affective, and psychomotor aspects in a balanced manner (Safiqo & Ghofur, 2025).

However, in practice, PAI instruction in schools continues to face various pedagogical challenges. The low level of students' active participation, the dominance of the lecture method, and the limited variety of instructional strategies and learning media are among the issues frequently encountered. These conditions cause the PAI learning process to tend to proceed in a one-way manner and provide insufficient space for students to engage actively in understanding, internalizing, and reflecting upon Islamic values. As a result, the holistic objectives of PAI learning have not yet been optimally achieved (Prayogi et al., 2024). Furthermore, learning approaches that remain teacher-centered have contributed to the emergence of students' perception that PAI is normative, textual, and insufficiently contextualized to the realities of their lives. PAI materials are often understood merely as an academic obligation rather than as a value-based guide relevant to social dynamics and the challenges of modern life. This situation indicates the existence of a gap between the ideal objectives of Islamic Religious Education and the actual learning practices taking place in the classroom (Sapruddin, 2024).

These issues indicate the need to develop PAI learning strategies that are more creative, contextual, and adaptive to contemporary developments. Creative learning strategies require not only a variety of methods, but also teachers' ability to utilize instructional media and technology in pedagogically meaningful ways. With appropriate strategies, PAI learning is expected to enhance students' active engagement, encourage the process of value reflection, and make PAI instruction more meaningful and relevant in shaping students' Islamic character amid ongoing social and cultural change (Ahwani et al., 2025).

In line with the advancement of digital technology, the use of learning-space-based educational applications offers new opportunities for the development of PAI learning strategies. Learning space applications enable teachers to design instruction that is more systematic, interactive, and contextual (Fajtriansyah et al., 2025). Through the available features, teachers can manage instructional materials, organize learning activities, provide feedback, and facilitate continuous student interaction and reflection. In this context, technology functions not merely as a medium for delivering content, but also as a means of supporting creative and meaningful learning strategies (Aisyah et al., 2025).

One learning-space application that has begun to be utilized in PAI instruction is the Rubel Application (Ruang Belajar). This application is designed to support the learning process through digital classroom management, the provision of instructional materials, assignments, and communication between teachers and students (Febriani et al., 2025). The presence of the Rubel Application provides opportunities for PAI teachers to develop more varied learning strategies, such as discussion-based learning, value reflection, and contextual assignments integrated with Islamic values. Accordingly, the use of the Rubel Application has the potential to serve as a supporting tool in the development of creative PAI instruction (Azizah Rahmah, 2025).

In addition, there remains a tendency for learning applications to be used in merely technical and administrative ways, without being accompanied by careful and reflective instructional planning. The use of educational technology that has

not been pedagogically integrated risks reducing learning-space applications to nothing more than tools for delivering content, rather than means of developing creative and meaningful learning strategies. This condition indicates that the use of learning-space applications requires more in-depth study, particularly regarding the dynamics of their implementation in Islamic Religious Education, both in terms of planning, execution, and learning reflection (Rahmadani, 2024).

In this context, it is important to examine empirically how learning-space applications are utilized in the practice of PAI instruction at the secondary school level. A school-context-based study is needed to obtain a comprehensive understanding of the process by which teachers adapt to integrating technology into their instructional strategies, as well as the extent to which learning applications are able to support teacher creativity and student engagement. This approach also enables researchers to understand the reality of learning application use as it occurs in the field, rather than merely on the basis of the design or ideal objectives of technology use (Mukaddar & Supratama, 2025).

SMAN 1 Yosowilangun is one of the senior high schools that has utilized the Rubel Application in the learning process, including in the subject of Islamic Religious Education. Based on preliminary observations, the Rubel Application is used as a supporting learning medium for delivering materials, managing assignments, and facilitating communication between teachers and students (Aprillah et al., 2025). In practice, PAI teachers at this school have begun to develop various creative learning strategies by utilizing the features available in the application. This phenomenon indicates the presence of a process of instructional adaptation and innovation that is worthy of scholarly investigation (Rosa et al., 2024).

Theoretically, the development of creative PAI learning strategies is grounded in the view that Islamic education must be dynamic and contextual. Islamic education aims to form the whole person by maintaining a balance among spiritual, intellectual, and social dimensions. Therefore, PAI instruction needs to be designed in such a way that it can accommodate students' needs as well as developments in science and technology (Kasturi et al., 2025). Constructivist learning theory emphasizes the importance of students' active involvement in constructing knowledge, while experiential learning theory asserts that meaningful learning experiences are more effective in instilling values and attitudes (Mandar & Sihono, 2025).

Several previous studies have examined the utilization of digital technology in the development of instructional design for Islamic Religious Education. A study by (Uy et al., 2025) showed that the use of digital media in PAI instruction has a positive effect on students' learning motivation and active participation. Similar findings were also reported by (Fajriansyah et al., 2025), who concluded that the integration of digital-based instructional media helps PAI teachers present learning materials in a more engaging and varied manner, thereby enabling students to understand abstract religious concepts more easily.

Other studies have highlighted the use of online learning applications as supporting tools in PAI instruction, particularly in the management of teaching materials and assignments. The results of these studies indicate that learning applications can facilitate teachers in organizing instruction and provide students with flexibility in accessing materials at any time. Nevertheless, most of these studies have placed greater emphasis on measuring the effectiveness of learning

media or applications in relation to students' learning outcomes, and generally employed quantitative approaches with cognitive achievement indicators as the primary focus of analysis (Muttaqin, 2024).

On the other hand, research examining PAI instruction from the perspective of process and user experience remains relatively limited, particularly with regard to how teachers design, adapt, and implement PAI learning strategies by utilizing learning applications. Studies that investigate the dynamics of learning application use, including the processes of planning, implementation, reflection, and the challenges faced by teachers in instructional practice, are still relatively scarce. In fact, these dynamic aspects are essential for understanding how technology genuinely functions as a support for creative learning strategies, rather than merely as a medium for content delivery (Supri & Ihsan, 2025).

In addition, studies that specifically examine the use of particular learning-space applications in PAI instruction at the senior high school level are still rare. Some existing studies continue to discuss learning platforms in general terms, without linking them to the school context, student characteristics, and teacher creativity in determining instructional strategies. This condition indicates the existence of a research gap concerning the use of learning-space applications as part of a creative and contextual pedagogical strategy in PAI instruction.

Based on this gap, a study entitled "The Use of the Ruang Belajar Application as a Supporting Tool for Creative PAI Learning Strategies at SMAN 1 Yosowilangun" is both interesting and relevant to undertake. This study does not merely focus on whether the learning-space application is used or how effective its use is, but rather places emphasis on the dynamics of the process of utilizing the application in PAI instruction. By employing a qualitative approach, this research seeks to reveal how PAI teachers use the learning-space application in designing creative learning strategies, how processes of adaptation and innovation take place, and what challenges and opportunities emerge in its implementation in the field. Thus, this study is expected to address the limitations of previous research and provide a new contribution to the study of technology-based PAI instruction (Amin et al., 2025).

## **2. Method**

This study employed a qualitative approach with a field research design, aiming to obtain an in-depth understanding of the use of the Rubel Application in Islamic Religious Education (PAI) learning at SMAN 1 Yosowilangun. A qualitative approach was chosen because the study emphasizes the aspects of process, meaning, and the dynamics of learning that naturally occur within the school environment.

The research was conducted at SMAN 1 Yosowilangun, with a focus on the PAI learning process and teachers' strategies in utilizing the Rubel Application as a supporting learning medium. The research subjects were determined using purposive sampling, namely Islamic Religious Education teachers who were directly involved in the use of the Rubel Application. In addition, several students who actively participated in application-based learning were selected as supporting informants in order to obtain more comprehensive and balanced data.

Data were collected through three main techniques: observation, interviews, and documentation. Observation was carried out directly during PAI learning activities to examine the process of using the Rubel Application, the interaction

between teachers and students, and the classroom learning situation. In-depth interviews were conducted with PAI teachers and students to explore information related to the planning, implementation, and their experiences in using the Rubel Application. Meanwhile, documentation was used to collect data in the form of instructional materials, school records, and other supporting documents relevant to the study (Syafrin et al., 2023).

The research instrument consisted of a semi-structured interview guide developed based on the focus of the study. Interviews with teachers were focused on learning strategies, the dynamics of application use, and the challenges encountered. Interviews with students were intended to explore their learning experiences and level of engagement in application-based learning. In addition, interviews with the application developer were conducted to obtain information regarding the background, concept, and pedagogical objectives underlying the development of the application. Data from these three sources were used as a form of source triangulation to enhance the validity of the research data.

The data obtained were analyzed using qualitative data analysis techniques. Data analysis was conducted using the Miles and Huberman interactive analysis model, which consists of three stages: data reduction, data display, and conclusion drawing. Data reduction was carried out by selecting, focusing, and simplifying the data relevant to the objectives of the study (Qomaruddin & Sa'diyah, 2024). Subsequently, the data were presented in the form of systematic descriptive narratives to facilitate the process of interpretation. The final stage was conclusion drawing, which was carried out continuously throughout the research process by interpreting the data comprehensively in order to obtain a holistic understanding of the use of the Rubel Application in PAI learning at SMAN 1 Yosowilangun.

The validity of the data in this study was tested through source and technique triangulation by comparing data obtained from observation, interviews, and documentation. In addition, the researcher conducted member checking with the informants to ensure that the data were consistent with the actual conditions in the field.

### **3. Result and Discussion**

#### **The Development and Design of the Ruang Belajar Application in PAI Learning**

The use of digital-based learning media in education has become an integral part of supporting effective learning processes that are adaptive to contemporary developments. In the context of PAI learning, the use of digital media is not merely a matter of following technological trends, but has become a necessity in addressing the challenges of twenty-first-century learning, which demands digital literacy skills, learner autonomy, and critical thinking abilities (Zulaiha B. Abas & Supi'ah, 2025).

Based on observations conducted at SMAN 1 Yosowilangun, digital media are utilized not only as a means of delivering instructional content, but also as an instrument for managing learning in a systematic and structured manner. Teachers make use of various forms of media, such as text, images, and videos, which are integrated into the Ruang Belajar Application (Rubel). The integration of these various media enables learning materials to be presented in a more varied manner, thereby not only facilitating students' understanding but also increasing their interest and engagement in the learning process (Zahro et al., 2025).

This finding indicates that digital media have a broader role than merely

serving as instructional aids, namely as a support system for organizing the learning process as a whole. With a clearly structured application, students are no longer fully dependent on the teacher's explanation, but are instead able to follow the learning sequence independently. This finding is in line with (Mustopa et al., 2024) who argue that digital media can enhance the effectiveness and interactivity of learning.

The development of the Ruang Belajar Application was motivated by the limitations of printed textbooks, which have thus far been unable to provide detailed technical guidance for the learning process. Based on an interview with the PAI teacher and developer of the Ruang Belajar Application, A. Muis (2026), textbooks present only the material without explaining the operational steps of learning in detail. This condition causes learning to depend heavily on the teacher's explanation and does not sufficiently encourage student independence. In response to this situation, the Ruang Belajar Application was developed not only as a medium for content delivery, but also as a structured technical guide for learning. This indicates that the application functions not merely as a supplementary medium, but as part of an instructional design developed systematically.

The decision to develop the application independently also carries strategic significance. Unlike platforms such as Google Classroom, which tend to be general in nature, a self-developed application allows teachers to exercise full control over the learning sequence, from the preparation of instructional materials to evaluation. In this way, teachers have the freedom to innovate and adjust learning to students' needs. In its development, the application was based on the MODERAT method, which includes the stages of Muhasabah, Observation, Deepening the Material, Elaboration, Actualization Space, Affirmation and Reflection, and Competency Testing. The adoption of this method as the basis for development indicates that the application was built on a pedagogical approach, rather than merely technical considerations.

Interestingly, the implementation of this method is not rigid, but flexible according to the characteristics of the subject matter. In Qur'anic material, the observation stage is focused on the analysis of verses, tajwid, and meaning, whereas in other materials it may take the form of observing videos or images. This flexibility demonstrates that the Ruang Belajar Application is capable of accommodating the diversity of PAI materials, each of which possesses distinct characteristics. The development process of the learning-space application also reveals a fairly complex dynamic. Trials conducted in 2024 in several schools showed that technology-based learning innovations cannot be immediately accepted optimally by students. They require time to adapt to the new system, particularly in understanding a learning sequence that differs from conventional methods.

In addition, it was found that several of the initial features were still difficult to understand, indicating that in the development of educational technology, usability is an important factor. Therefore, the menus were simplified and several learning stages were merged. This evaluation process shows that application development is not static, but rather proceeds through a process of reflection and continuous improvement. Thus, the resulting application represents the outcome of an adaptive process between instructional needs and users' capabilities.

### **The Use of the Ruang Belajar Application in Islamic Religious Education (PAI) Learning**

The use of the Ruang Belajar Application in PAI learning demonstrates dynamics that are reflected not only in technical changes, but also in changes in

students' learning behavior and the role of the teacher. One of the main problems encountered in PAI learning is students' low level of learning independence, which is indicated by their dependence on peers in completing assignments (Rakhma et al., 2024).

Through the use of the Ruang Belajar Application, students are encouraged to learn independently because each individual has personal access and is required to follow the learning sequence that has been provided. The flexibility of access, which allows learning to take place outside the classroom, is also an important factor in enhancing learning independence. This indicates that technology can expand the learning space from one that was previously limited into one that is more open. Nevertheless, independence does not stand alone. The Ruang Belajar Application also promotes collaboration through the Ruang Aktualisasi feature. This reflects a balance between independent learning and collaborative learning, which is one of the defining characteristics of twenty-first-century education.

In addition, the use of the Ruang Belajar Application has also transformed the learning atmosphere into one that is more enjoyable. This is due to the variety of media and learning activities that make the learning process less monotonous. The use of video, for instance, not only supports students' understanding of the material, but also encourages them to think critically about the information they receive (Fitri et al., 2025).

In its implementation, the learning strategy within the Ruang Belajar Application is developed through the MODERAT method, which consists of the stages of Muhasabah, Observation, Deepening the Material, Elaboration, Ruang Aktualisasi, Affirmation and Reflection, and Competency Testing. Each stage is systematically designed to create a structured learning sequence while simultaneously encouraging students' active engagement.

The Muhasabah stage functions as an introduction to the lesson, containing an initial explanation of the material as well as guiding questions. This stage aims to build students' readiness to learn while also activating their prior knowledge. Through the use of guiding questions, students are encouraged to think critically from the outset of the lesson.

Subsequently, the Observation stage is directed toward activities of observing material that has previously been studied. At this stage, students are usually provided with learning media in the form of instructional videos, which are then analyzed through a set of prepared questions. This observational activity serves not only to strengthen understanding, but also to train students' analytical abilities in relation to a learning phenomenon.

The next stage is Deepening the Material, which focuses on deepening conceptual understanding through various learning resources such as texts, videos, and illustrations. At this stage, students receive more comprehensive explanations, thereby strengthening their conceptual understanding of the material being studied.

After that, the Elaboration stage is carried out through collaborative activities, generally in the form of group work. Students present the results of the tasks they completed in the previous stage, particularly those derived from observation activities. This stage plays an important role in developing students' communication skills, teamwork, and confidence in expressing their opinions.

The Ruang Aktualisasi stage becomes one of the distinctive features of this application-based learning model. At this stage, students are asked to produce creative works, such as short videos, vlogs, or dramas related to the learning material. This activity requires not only an understanding of the content, but also the ability to present messages in an engaging and communicative manner.

Accordingly, this stage contributes to the development of students' creativity as well as their digital literacy skills.

Furthermore, the Affirmation and Reflection stage is used as a means of self-evaluation through reflective questions. This stage provides students with space to assess their own understanding and receive feedback on the learning process they have undergone.

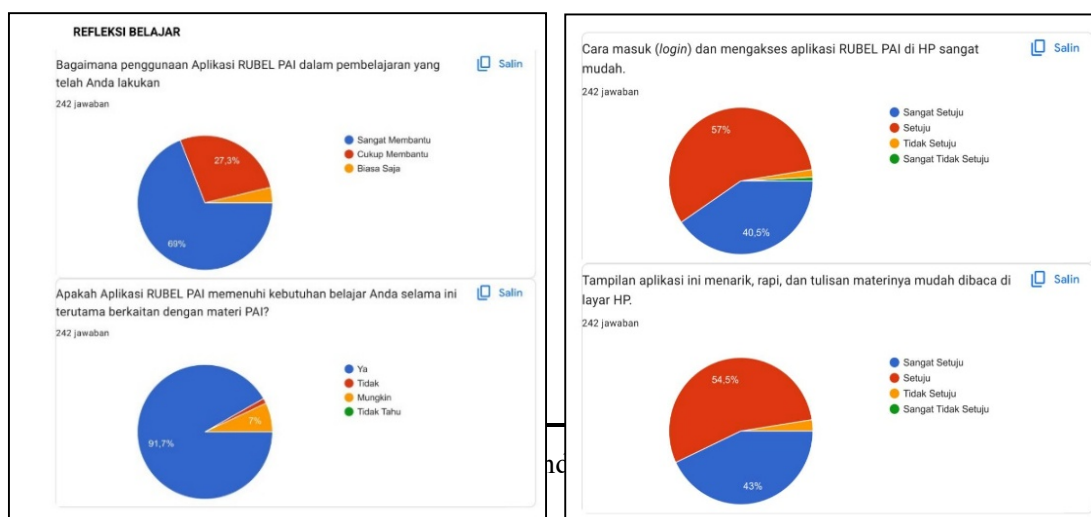
The final stage is the Competency Test, which is mandatory for students after they have completed the entire series of learning activities. This test functions as a form of final evaluation as well as a daily assessment of students' competency achievement. Through this stage, the learning process is not only focused on activities, but also on the attainment of measurable learning outcomes.

Interestingly, the learning process is not limited solely to the application, but is also integrated with social media such as Facebook. The use of Facebook as a medium for assignment submission indicates an adaptation of instructional strategies to students' digital habits. This platform was chosen because it is more familiar and easily accessible, thereby increasing students' participation. The integration between a formal application and social media demonstrates that technology-based learning does not have to be confined to a single platform, but can instead be developed flexibly according to need. It also strengthens the interaction between students and teachers, thereby making learning more communicative (Hajar et al., 2024).

From the perspective of creativity, the use of the Ruang Belajar Application has had a fairly significant impact. Students are encouraged to make use of technology, including artificial intelligence, in completing assignments. This not only enhances creativity, but also fosters adaptability to technological developments. Even so, the use of technology also presents challenges in the form of potential academic dishonesty. Therefore, the Ruang Belajar Application is equipped with detailed technical instructions as an effort to minimize such misconduct. This shows that in technology-based learning, control and task design are important factors in maintaining academic integrity. Overall, the dynamics of using the Ruang Belajar Application indicate that technology not only changes the way students learn, but also shapes learning behavior patterns that are more independent, collaborative, and creative.

### The Impact, Instructional Changes, and Challenges in the Use of the Ruang Belajar Application

The research findings indicate that, based on interviews with the Islamic Religious Education teacher who also served as the application developer, the use of the Ruang Belajar Application had a positive impact on the PAI learning process.



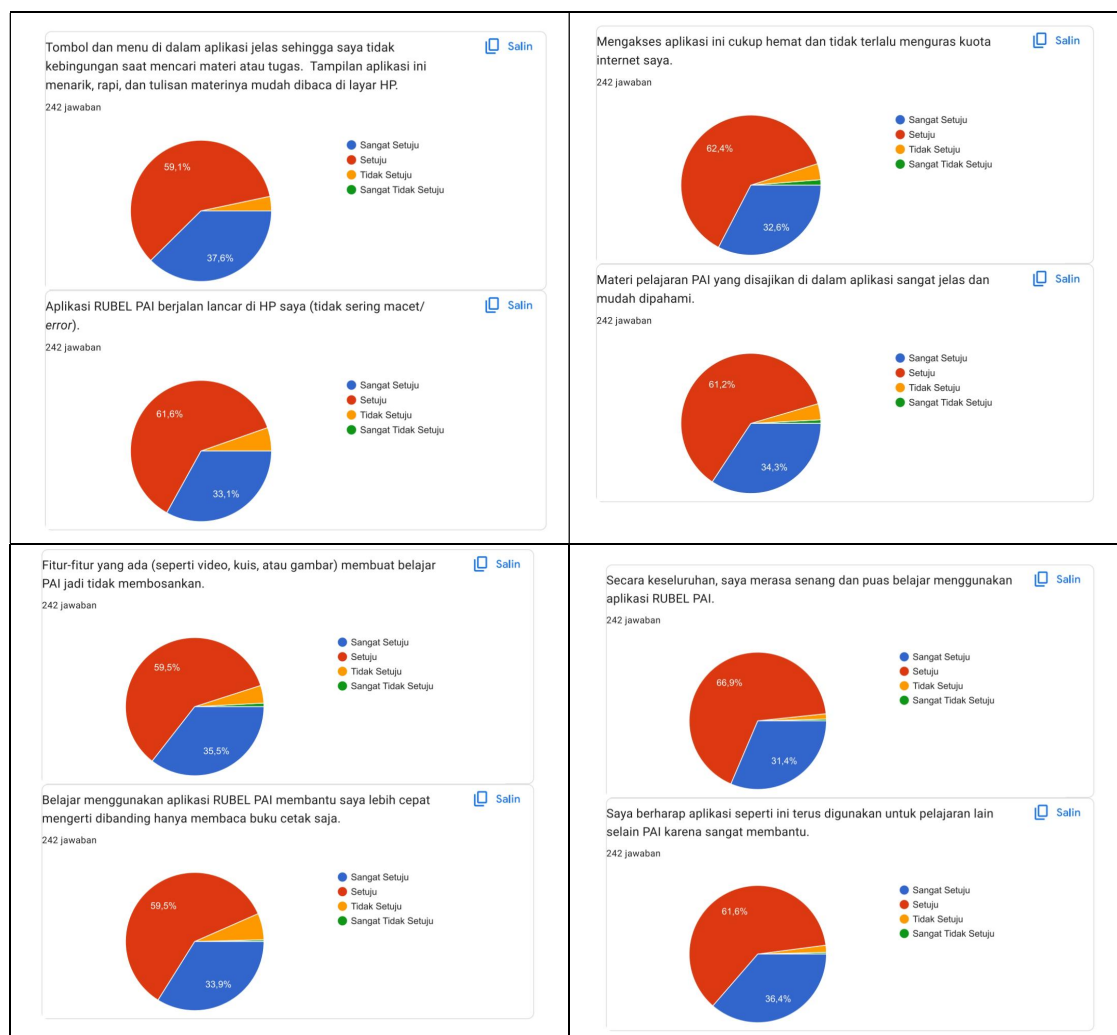


Table 1. Results of the Student Satisfaction Survey on the Ruang Belajar Application

Based on observational findings supported by survey data from 242 twelfth-grade students, the use of the Ruang Belajar Application demonstrated a tendency toward positive student responses to the PAI learning process. The survey data not only present statistical figures, but also reflect students' learning experiences in using the application as a learning medium.

Most students stated that the application made it easier for them to understand the material. This is reflected in the predominance of responses indicating that the application was either highly helpful or sufficiently helpful in the learning process. This finding suggests that the Ruang Belajar Application is capable of serving as a more adaptive alternative learning medium compared with conventional methods.

Furthermore, students also showed a high level of acceptance of the application, particularly in relation to its ability to meet their learning needs. This indicates that the application functions not merely as a medium for delivering

content, but also as a tool capable of supporting the learning process in a more comprehensive manner.

In terms of ease of use, the findings reveal that students did not experience significant difficulties in accessing the application. Ease of login, clear navigation, and an attractive interface were factors that supported learning comfort. Students also stated that the application's simple and systematic design helped them understand the learning sequence more easily.

In addition, with regard to content presentation, students considered that materials delivered through various media such as videos, images, and quizzes provided a more engaging learning experience. This finding indicates that the integration of multiple forms of media within the application is able to increase students' interest and engagement in the learning process. In the context of content comprehension, students also perceived that they were able to understand learning concepts more quickly than when relying solely on printed textbooks. This finding demonstrates that the use of digital technology in PAI learning is capable of supporting the effectiveness of the learning process.

Overall, the level of student satisfaction with the use of the Ruang Belajar Application may be categorized as high. Students not only felt assisted by the application, but also demonstrated a positive attitude toward its continued use, and even recommended that it be implemented in other subjects. This indicates that the Ruang Belajar Application has the potential to be developed as a broader learning medium.

This high level of satisfaction shows that the learning-space application is not only technically effective, but is also capable of providing a learning experience that aligns with students' needs. Ease of use, an attractive interface, and a diversity of features are factors that support the application's success in learning. From an instructional perspective, the use of the learning-space application has had an impact on improving students' independence, activeness, creativity, and comprehension. This indicates that technology-based learning affects not only cognitive aspects, but also affective and psychomotor dimensions..

Changes were also evident in the learning atmosphere, which became more active and enjoyable. Students no longer displayed the boredom often associated with conventional learning, but instead became more enthusiastic and engaged in the learning process. This finding suggests that variation in instructional methods and learning media has a significant influence on learning motivation. In addition, the use of technology also plays a role in shaping students' digital literacy. Although it does not entirely transform their habits of using gadgets, the application is able to direct students toward using technology in a more productive manner (Yuni et al., 2025).

Nevertheless, the use of the learning-space application also encountered challenges, particularly limitations in internet access. This obstacle shows that the success of technology-based learning is determined not only by the quality of the application, but also by the availability of infrastructure. To address this issue, strategies such as network sharing through hotspots and group-based learning were implemented. These strategies not only helped overcome technical difficulties, but also strengthened cooperation among students.

Accordingly, the use of the Ruang Belajar Application not only had a positive impact on learning outcomes, but also revealed dynamics within the learning process involving adaptation, innovation, and collaboration. This demonstrates that technology-based learning is an evolving process that requires continuous adjustment (Supriatna et al., 2025).

#### 4. Conclusion

Based on the findings of this study, it can be concluded that the use of the Ruang Belajar (Rubel) Application in Islamic Religious Education (PAI) learning at SMAN 1 Yosowilangun demonstrates a complex and constructive dynamic. The application functions not merely as a medium for delivering instructional content, but also as a learning system capable of organizing the learning process in a more systematic, structured, and technology-adaptive manner.

The implementation of a learning strategy based on the MODERAT sequence (Muhasabah, Observation, Deepening the Material, Elaboration, Actualization Space, Affirmation and Reflection, and Competency Testing) constitutes one of the key findings of this study. This strategy is able to create a clear and well-directed learning sequence while encouraging students' active involvement at every stage of the learning process. Students do not merely function as recipients of information, but also as active subjects who explore, analyze, and actualize the learning material through various activities such as discussions, presentations, and the creation of digital content.

In addition, the use of the Rubel Application has been shown to have a positive impact on increasing students' interest, motivation, and understanding of PAI materials. Learning becomes more engaging, interactive, and less monotonous because it is supported by a variety of media, such as texts, videos, and project-based assignments. The high level of student satisfaction with the use of the application also indicates a very positive response, thereby reinforcing the view that digital technology can serve as a solution for improving the quality of learning.

Nevertheless, several obstacles were still identified in its implementation, particularly those related to limited internet access and differences in students' digital abilities. This condition indicates that the integration of technology in learning cannot be separated from challenges that require strategic adjustment. Teachers play an important role in making such adaptations through various solutions, such as the use of hotspots and the implementation of group-based learning.

Accordingly, it can be affirmed that the use of the Ruang Belajar Application contributes to supporting the development of creative, innovative, and student-centered PAI learning strategies. These findings also demonstrate that the integration of technology through a systematic approach, such as the MODERAT method, has the potential to serve as a learning model that is relevant to the demands of twenty-first-century education.

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