



Non-Test Evaluation Analysis of Teachers and Students on the Room Planner Application in Interior Design

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Abstract: Technology in interior design education is essential for improving the quality of education. Android is a technology that can help students create a unique classroom environment. The aim of this research is to determine user satisfaction levels with the Room Planner application while they are learning about interior design. To understand how users utilize the Room Planner application, five teachers and ten students participated in a survey. User opinions about the application were also examined. The analysis results showed that most educators were happy using the application as an educational tool. The majority of compatibility percentages were "Suitable" or "Very Suitable," with value ranges between 70.77% and 84.62%. Additionally, most students liked the Room Planner application during the learning process. The compatibility percentages were also "Suitable" or "Very Suitable," with value ranges around 65.56% and 94.44%. This is evidence that students are using the medium well. The Room Planner application is liked by most educators and students due to its ease of use and space planning efficiency. The results indicate that the application can be improved to meet the broader needs of users. The analysis results will help application developers make Room Planner a beneficial application for education. By improving and optimizing existing features, this application will help students gain additional knowledge about interior design. Consequently, this research may have significant advantages.

Abstract: Teknologi dalam pembelajaran desain interior sangat penting untuk meningkatkan kualitas pendidikan. Android adalah teknologi yang dapat membantu siswa menciptakan lingkungan kelas yang unik. Tujuan dari penelitian ini adalah untuk menentukan tingkat kepuasan pengguna dengan aplikasi Room Planner saat mereka belajar tentang desain interior. Untuk mengetahui bagaimana pengguna menggunakan aplikasi Room Planner, lima guru dan sepuluh siswa mengikuti survei. Pendapat pengguna tentang aplikasi juga diperiksa. Hasil analisis menunjukkan bahwa sebagian besar pendidik senang menggunakan aplikasi sebagai alat pendidikan. Sebagian besar persentase kecocokan adalah "Sesuai" atau "Sangat Sesuai", dengan rentang nilai antara 70,77% dan 84,62%. Selain itu, sebagian besar siswa menyukai aplikasi room planner selama proses pembelajaran. Persentase kecocokan juga adalah "Sesuai" atau "Sangat Sesuai", dengan rentang nilai sekitar 65,56 % serta 94,44%. Ini adalah bukti bahwa siswa menggunakan media dengan baik. Aplikasi Room Planner disukai sebagian besar pendidik dan siswa karena kemudahan penggunaan dan efisiensi perencanaan ruang. Hasil menunjukkan bahwa aplikasi dapat ditingkatkan untuk memenuhi kebutuhan pengguna yang lebih luas. Hasil analisis ini akan membantu pengembang aplikasi membuat Room Planner menjadi aplikasi yang bermanfaat untuk pendidikan. Dengan memperbaiki dan mengoptimalkan fitur yang ada, aplikasi ini akan membantu siswa memperoleh pengetahuan tambahan tentang desain interior. Akibatnya, penelitian ini mungkin memiliki keuntungan yang signifikan.

A. Introduction

According to Yuanta, 2020 (Candrawaty et al., 2022), The world of education is influenced by technological advances, especially those related to the media used for teaching. To overcome this problem and achieve optimal learning objectives, teachers need the help of learning media. (Hadjjah, 2018). According to Kustiawan, 2016 (in Amanda et al., 2020) Media is a communication tool used in the learning process to carry information in the form of teaching materials, attracting student interest. Media Learning media development is one way of using appropriate learning media in the classroom learning and teaching process that can bring teachers and students success. Learning media is very important for teachers so students can understand classroom learning. Learning media is any type of tool, or material teachers use to convey information and teaching materials to students. In a broader sense, learning media can include any type of material or tool used in the learning process to help students understand and comprehend the subject matter (Dwi, 2023). Learning media are divided into two categories: conventional and modern learning media. Conventional learning media is still limited today, while multimedia technology that can be integrated into computers and smartphones helps modern learning (Wafa & Fahmi, 2020).

Nowadays, many students bring their smartphones to school every day. Since most students only use smartphones to play games and interact with social media, this can disrupt their learning process and cause students to become addicted to smartphones (Ardiansyah, 2020). A smartphone, also known as a "smartphone," is a space that has advanced technology that allows various devices and systems in the building to communicate with each other. (Saharudin et al., 2021) Smartphones have developed from tertiary goods to secondary goods in the modern era. The Android operating system in smartphones is already used in various fields, including social, economic, and education (Kumala et al, 2022). According to (Darwis et al., 2020), Educational games are one of the types of games most favored by many people because, in addition to functioning as entertainment, educational games also aim to attract a person's interest in a particular subject matter so that they can better understand what is being taught. Educational games have now developed into mobile-based smartphones to be played anytime and anywhere. (Aryadi, 2023).

Using the Room Planner application to develop Android-based learning media is an exciting innovation for teachers and students. The Open Handset Alliance, led by Google, developed an open-source mobile operating system called Android. Android, built on a Linux base, allows the development of applications for mobile devices such as smartphones and tablets. Android has many features, such as a camera, GPS navigation, email, and access to the Google Play Store, as well as many more. Due to its open architecture, developers can create applications and change the operating system according to their needs. (Putra et al., 2023)

According to Sutrisno, 2011 (in Damarjati & Miatun, 2021), Mobile-based learning has increased due to technological advances. By using mobile devices, mobile learning

allows students to access learning materials, directions, and learning applications without being limited by location or time (Warsita, 2018). In some studies, Android is a helpful learning tool for improving the teaching and learning process. This study found that using Android in education can improve student learning outcomes, shorten the preparation of student report cards, and improve exam efficiency (Faqih, 2020). Research (Santoso & Budiman, 2021) entitled "Development of Android-Based Learning Evaluation Media at Madrasah Aliyah Negeri Pontianak" also revealed that the android-based evaluation media used in the study is expected to help students learn more efficiently, improve the quality of education, and increase their motivation to learn. Research conducted by (Kumala et al., 2022) also stated that after students used the media using an Android-based unit conversion application, they gained a better understanding of the idea and found it easier to solve unit conversion problems.

Room Planner app is an Android-based application used for designing homes in 3D, allowing users to create highly detailed and professional home designs. The app also lets users select interior and exterior items from an extensive catalog to design and furnish the home. The app also lets users see what it looks like in their rooms and get a good idea of how everything will look better. (Hernández, 2024) . The Room Planner app has many features, such as creating three-dimensional models, changing various colors and textures, using ready-made templates, setting and changing individual parameters and dimensions, adding an unlimited number of objects, accessing color catalogs, editing each element, using stores like IKEA and Amazon, taking virtual reality tours, and joining an extensive community.

To download the room planner application, users can go to the web Uptodown, where the Room Planner App for Android is available for free download from Uptodown. Using this app, users can design a home meticulously and like a professional. Users can select the type of room they want and decide the flooring, walls, windows, and other elements to use. Download from Google Play: Room Planner App: Design House 3D can be downloaded from Google Play. This app allows you to design your dream home in three dimensions: design visualization, interior planning, and a section to share your design. To get the Room Planner app, download it from Apkmonk. This app allows you to design and decorate rooms in 2D and 3D formats and has additional features such as interior planning and design sharing sections. Download from IDCloudHost: The Room Planner app can be downloaded from IDCloudHost. The app allows for designing and decorating rooms in two-dimensional and three-dimensional formats. It has additional features such as interior planning, a catalog of over 4000 items, and a community where users can upload and share design projects. However, remember that some apps may require Android 9 and above or additional versions, and some features may require an internet connection. Before downloading an app, users should first check the operating system requirements and features (Room Planner Ltd, 2024).

In this article, researchers will discuss the response between teachers and students to the development of Android-based learning resources using the Room Planner

application (Candra, 2023). This research focuses on a non-test evaluation review of how teachers and students use the Room Planner app for interior design. This may be because only a few studies have specifically assessed the use of such apps in an educational context. This research is also necessary because it can increase understanding of how technology can help improve interior design learning. By identifying the advantages and disadvantages from both teacher and student perspectives, this research can provide valuable input for curriculum development and the use of technology in education. An interior designer must be able to combine usability, aesthetics, and safety in every building project. According to (Gamedia, 2021), A good interior depends on the balance of safety, lighting, and arrangement to form an appropriate aesthetic (Saputra & Mulyanto, 2023). According to N. Sitanggang, 2020 (In Rohman & Romli., 2023), The process of planning a room, called interior design, considers users' physical and psychological needs. One branch of art called interior design focuses on planning a room in a building. According to this definition, interior designers must consider aesthetic aspects and ensure that the room is harmonious, comfortable, and safe.

The word "evaluation" comes from the English word "interpretation," which means "judgment or interpretation." Evaluation is the process of determining the value of something using specific parameters to achieve specific goals. In principle, evaluation is an act of assessment to know how effective an action is in achieving goals. Therefore, evaluation activities must be carried out by planning, collecting, reporting, and using data about student learning outcomes (Hapiz, 2020). In education, evaluation media can be used as a means of communication between schools and students that is systematically organized and easy to understand to be given to students. This media also functions as a promotional tool for each exam and multimedia-based product, which makes product information more interactive, engaging, complete, and accurate (Santoso & Budiman, 2021).

The evaluation techniques typically used in learning fall into two categories: tests and non-tests. Non-test techniques track learning progress in different ways than tests. Scales, journals, questionnaires, self-assessment, peer assessment, and observation are examples of non-test techniques. In assessment activities, various assessment instruments and tools are used that are tailored to the techniques used in the assessment. Non-test assessment instruments are tools used to measure students' psychomotor aspects, attitudes, or values. Non-test instruments include observation sheets, checklists, self/friend assessment sheets, and anecdotes. (Wulan, 2015) Non-test evaluation methods are evaluation methods carried out without using tests. This method usually evaluates a child's overall personality, including attitudes, behaviors, traits, social attitudes, speaking styles, life history, and other elements related to the educational process, both individuals and groups. (Wulan, 2015). According to Anas Sudijono, 2009 (in Wulan, 2015). Non-test evaluation is an evaluation of student learning outcomes that is carried out by not "testing" students. Instead, this evaluation is carried out using systematic observation (observation), interviews (interviews), distributing questionnaires (surveys), and examining or analyzing documents along with others. The non-test instrument evaluation method was used to

evaluate the feasibility of the Room Planner application as a solution for developing Android-based learning media for interior design.

According to Maharani and Widhiasih, 2016 (in [Kartini et al., 2020](#)), Interesting learning makes students happier and more accessible to absorb knowledge. Student responses during the learning process show this. In responding to influences or stimuli from situations carried out by others, students carry out social reactions known as student responses. Student responses are critical in learning because teachers can change students' ways of thinking to be more suitable. ([Efendi et al., 2020](#)) It is expected that educators understand how students think and can help them change how they think in a good and correct way. To do this, educators must identify where student errors occur and use those errors as a source of information to help students improve their understanding ([Kartini et al., 2020](#)). According to Ign Masidjo, 1995 (in [Wulan, 2015](#)) stated that the questionnaire consists of a complete and detailed list of questions the respondent must answer about things he knows or himself. According to Susilo Rahardjo & Gudnanto (2011) in ([Wulan, 2015](#)), A questionnaire, also called a questionnaire, is a way to help students' understanding by submitting in writing and providing a list of questions that must be answered or done by students in writing as well. Questionnaires are logically arranged questions related to the research subject.

Based on these issues, this research aims to find out how technology can enhance interior design learning and provide valuable input for curriculum development and technology use. This research also examines how the Room Planner application, an Android-based learning media, can improve interior design learning. Specifically, the research objectives are as follows: Assess teachers' response to the use of Room Planner application in supporting interior design learning process, Evaluate students' response to the use of Room Planner application in understanding and applying interior design concepts, Identify advantages and disadvantages from teachers' and students' perspectives regarding the use of Room Planner application in interior design learning, Provide a deeper understanding of how technology, particularly Room Planner application, can help improve interior design learning. Therefore, it is hoped that this research will better understand how and whether the Room Planner app helps teach interior design. In addition, it will also provide an outline for additional research in this area.

B. Method

Based on the research issue, the research method used in this study is a descriptive qualitative approach. This approach was chosen because this research aims to explain and analyze the use of the Room Planner application by teachers and students, as well as their responses to the use of the application in the context of learning. This research is a small group study, and the research subjects consist of 5 teachers and 10 students of grade XI who are involved in the interior design learning process using the Room Planner application. Teachers were chosen because they directly use the application in the learning process. In contrast, students were chosen because they are the application's end users in the learning

process. The research was conducted at SMK PGRI 1 Gresik, where teachers and grade XI students used the Room Planner application in Interior Design learning. Data for this study was collected using a specially designed questionnaire. This questionnaire consists of two versions: the version for teachers and the version for students. The questionnaire for teachers contained 13 questions designed to explore teachers' views and experiences towards using the Room Planner application in the learning process. Meanwhile, the questionnaire for students consisted of 18 questions that aimed to explore students' perceptions and experiences in using this application in learning. After the lesson, the respondents (teachers and students) were given a Google form to answer some questions and find out their responses regarding using the Room Planner App.

Calculating the percentage of the total score against the maximum score is dividing the total score obtained by the maximum possible score, then multiplying the result by 100 to get a value in percentage form. The equation can be written as follows:

$$\text{Percentage score} = \frac{\text{Total Score Obtained}}{\text{Maximum Number of score}} \times 100\%$$

Adaptation of : (Candrawaty et al., 2022)

Figure 1. Equation for Calculating

This formula compares the total score obtained by a person or entity with the maximum possible score and then converts this ratio into a percentage by multiplying it by 100. This study uses a specially designed main instrument, namely a questionnaire using a closed questionnaire. In this questionnaire, each question has a predetermined answer choice. A Likert scale, range of values from 1 to 5. This range of values is used to measure respondents' attitudes and values and covers the spectrum from "strongly agree," "agree," "less agree," "disagree," and "strongly disagree." (Arifin, 2012) The range of values can be seen in the following table:

Table 1. Likert Scale

Score	Description
5	Highly Appropriate/Very Good
4	Appropriate/Good
3	Moderately Appropriate/Moderately Good
2	Less Appropriate /Less Good
1	Not Appropriate /Not Good

Adaptation of : (Arifin, 2012)

Using the Likert scale in this study allows respondents to express their agreement or disagreement with the statements given. By using a closed questionnaire, researchers can collect data systematically and efficiently. This approach allows for a more straightforward analysis of the results because the answer choices are predetermined, thus facilitating the

data processing. By using this instrument, researchers can gain deep insight into the attitudes and views of respondents on the topic under study. The results of using this questionnaire can provide a better understanding of the variables under study and facilitate the process of interpreting the research results in more detail. Thus, this instrument is essential in collecting and analyzing data for this research.

The data obtained from the questionnaire will be analyzed quantitatively. The analysis will be carried out by calculating the percentage of the results of teacher and student responses to the Room Planner application. This percentage will then be interpreted using the interpretation table provided. In addition, the frequency of responses for each available option will also be calculated to determine which questions are better or less good. The highest frequency is considered as the tendency of the answer. After obtaining the results of the percentage calculation, then interpret which questions are better and which are less good by finding the frequency of each participant's response for each available option. When the measuring instrument is used, the highest frequency is considered the response's tendency. The criteria for the practicality of the application of Android-based interactive multimedia can be seen in the table below.

Table 2. Interpretation of Assessment Results

Assessment (%)	Interpretation
$81 < X \leq 100$	Highly Appropriate
$61 < X \leq 80$	Appropriate
$41 < X \leq 60$	Moderately Appropriate
$21 < X \leq 40$	Less Suitable
$0 < X \leq 20$	Not Suitable

Adaptation of : (Riduwan & Akdon, 2015)

This research explores using the Room Planner application in the context of Interior Design learning. By focusing on the application, it is hoped that this research can provide a deeper understanding of its potential and effectiveness in supporting the learning process. The results generated from this research are expected to be a valuable source of insight for educational practitioners, especially those in art and design. With a deeper understanding of how the Room Planner application can be used in Interior Design learning, educational practitioners can develop more innovative and interactive learning methods. This can open up opportunities to create a more exciting and meaningful learning experience for students. In addition to providing practical benefits, the results of this study are also expected to be a foundation for further research in the same or related fields. As such, this research has direct relevance in improving Interior Design learning practices and has the potential to expand understanding and knowledge in this area through future research. With a solid foundation of this research, it is expected to encourage further development in art and design education.



Figure 2. Research Flow

C. Result and Discussion

Result

This research data was obtained from the answers to the teacher and student response questionnaire to the Room Planner application in the education process. The teacher and student response questionnaire aims to find out how teachers and students respond to the media created. Likert scale questionnaire assessment, thus the next step is to calculate the Number of scores obtained from each respondent and the maximum number of scores for each teacher and student respondent. The Number of questionnaire questions for teachers includes three research aspects divided into 13 questions with a maximum score of 65. The Number of questionnaire questions for students includes 5 aspects of research with 18 questions, and the maximum score obtained is 90. The indicator aspects of the teacher response questionnaire include program display, interactivity, and ease of program use. The indicator aspects for students include program display, interactivity, ease of program, and attractiveness and use. Student responses to Android-based Learning media using the Roomplanner Application get the "Positive" category.

Based on the media feasibility test. The following are the results of teacher and student answers during the Room Planner application trial:

Table 3. Teacher's Response to Media Usage Trial

Respondents	Percentage	Category
R1	72.31%	Suitable
R2	84.62%	Very compliant
R3	70.77%	Suitable
R4	80.00%	Appropriate
R5	84.62%	Very compliant

The data shows that the Room Planner App had a positive reception among teachers, with most respondents finding it suitable or very suitable as a learning medium. The high percentage of suitability, which reached between 70.77% and 84.62%, confirmed that the app was well received. The interpretation of this data suggests that the Room Planner App may have provided a practical and relevant solution for educators in enriching students' learning experiences. The presence of features that allow users to plan and visualize learning spaces interactively may be a determining factor in the success of this app. Positive responses from teachers also indicate that the app can increase student engagement and provide a more engaging learning experience. Thus, the Room Planner App has the potential to be a

valuable tool in an educational context, assisting teachers in delivering material innovatively and engagingly for students.

Table 4. Response to Media Usage Trial on Students

Respondents	Percentage	Category
R1	84.44%	Very Suitable
R2	84.44%	Very Suitable
R3	74.44%	Suitable
R4	66.67%	Suitable
R5	92.22%	Very Suitable
R6	65.56%	Very Suitable
R7	81.11%	Very Suitable
R8	64.44%	Very Suitable
R9	72.22%	Very Suitable
R10	94.44%	Very Suitable

Data from Table 4 highlights students' positive response to media use in learning. With most students considering the use of media appropriate or very appropriate, with the percentage of suitability reaching 65.56% to 94.44%, it can be concluded that students will receive the media. This response shows that using media in learning successfully arouses students' interest and involvement in learning. Most likely, the media provides a fun and interactive learning approach, which allows students to understand the concepts taught more efficiently. Media use can also stimulate students' curiosity and strengthen their understanding of the learning material. Therefore, the results of this study indicate that the integration of media in learning can improve the overall effectiveness of the learning process. The positive responses from students also indicate that this approach can be a value-added strategy in modern education, allowing students to learn more excitingly and effectively.

It is important to note that most teachers and students, in certain aspects, indicated the app's suitability to learning needs. These aspects include program appearance, interactivity, and ease of use, which are critical factors in evaluating the effectiveness of a learning medium. Not only that, for students, the additional aspects of attractiveness and usability are also important considerations, and the Room Planner App seems to meet expectations in these aspects successfully. Overall, the pilot test results show that teachers and students rated media use in learning positively, and most students rated media as appropriate or very appropriate. These results indicate that using the media has successfully enhanced the learning experience of both teachers and students.

Discussion

Discussing the relationship between research results, basic concepts, and hypotheses requires a deep understanding of the research objectives and context. In this study, the focus

on evaluating teachers' and students' responses to using the Room Planner application as a learning media reflects the basic concept that the effectiveness of learning media can improve the learning experience. Support from learning theories such as constructivism strengthens the research foundation, emphasizing the importance of active interaction in the learning process. According to constructivism theory, learning is not a process of transferring knowledge; students should create or construct their knowledge. Thus, students should be able to run the learning center independently. In constructivism theory, teachers and educators only function as facilitators. Therefore, this learning theory gave birth to various student-centered or student-centered learning models, approaches, and methods (Rahma, 2021).

Room Planner aims to enrich the learning experience by providing an interactive platform that allows active participation from teachers and students using constructivism. The hypothesis proposed, namely that using the Room Planner application will increase positive responses from teachers and students, was supported by the study's results. This shows consistency between what was expected from using the application and what was found in the research. This consistency confirms that constructivism is the underlying theory of this research. This theory states that effective use of learning media can enhance the learning experience. Constructivism theory also states that students construct knowledge through their experiences and interactions with their environment. In using learning media, this theory emphasizes how important student interaction and activity are in building their knowledge. It allows students to construct their meaning through various experiences and contexts. Thus, effective use of learning media can help students gain a broader learning experience (Solichin, 2021).

By considering the empirical facts obtained from teachers' and students' responses to the Room Planner application, the conclusions of this study are supported by accurate data, thus strengthening the positive implications of using the media as a learning tool. The importance of this research lies in its contribution to the understanding of the use of technology in the context of education. This research emphasizes the importance of active interaction between teachers and students in the learning process through the constructivism approach. As one of the influential learning theories, constructivism highlights the role of knowledge construction by individuals based on their experiences and perceptions. Using the Room Planner app, students can be actively involved in learning, honing their problem-solving, creativity, and collaboration skills.

Although the findings from this study support the hypotheses, it is essential to note that it also has limitations and areas for further development. One possible limitation is the limited sample or scope of the study, which is limited to one particular location or context. To gain a more comprehensive understanding of the effectiveness of the Room Planner app as a learning medium, research involving a more comprehensive sample or more diverse learning contexts could be the next step. In addition, future research can deepen the understanding of the mechanism behind the effectiveness of using the Room Planner application in improving the learning experience. This can be done through a more in-depth

qualitative approach, such as in-depth interviews with teachers and students or direct observation of interactions in learning using the app.

In a modern educational context increasingly characterized by technology, research such as this is important in helping to guide effective learning practices. The appropriate use of learning media, such as the Room Planner app, can increase students' motivation and engagement in learning and open the door to more diverse and enjoyable learning experiences. Overall, this research contributes to understanding the effectiveness of learning media in educational contexts. Through the constructivist approach and support from other learning theories, this research shows that using the Room Planner app can enhance the learning experience, aligning with student-centered learning principles. Given its limitations and potential for further development, this research provides a solid basis for further exploration of technology's use in supporting practical and student-centered learning.

D. Conclusion

Based on the research results, it can be concluded that using the Room Planner Application in the learning process received a positive response from teachers and students. This confirms that this application has successfully achieved the research objectives, namely making a positive contribution to the learning experience in the classroom. With a good response from both parties, it can be said that the research hypothesis stating that using the Room Planner application will increase learning effectiveness has been proven. From the teachers' perspective, the app is considered suitable for their learning needs, indicating that they find added value in using it as a tool for delivering materials to students. Meanwhile, from the students' perspective, the app's suitability to their learning needs was measured through program appearance, interactivity, and ease of use, all of which received positive responses. Thus, it can be concluded that using the Room Planner App in learning is efficacious in improving the quality of the learning experience for teachers and students. My opinion, which is based on the facts that have been revealed in the research and related references, is that the integration of technology-based learning media, such as the Room Planner application, can be a valuable asset in improving the effectiveness of learning in the field of Interior Design. Positive responses from teachers and students indicate that this media can facilitate a more interactive and visual understanding of the material and increase learning engagement and interest.

The implications of this research are very relevant in the context of educational technology development and innovative learning practices. Several implications were considered, namely, the development of educational applications. The results of this study encouraged the development of other educational applications that can be used in the learning process. By paying attention to aspects considered necessary by teachers and students, such as program appearance, interactivity, and ease of use, developers can focus on developing more effective and relevant applications. Then, the impact on teacher training is that teachers can be given more intensive training in using educational technology such

as Room Planner Application. This training will help them maximize the potential of the application in supporting classroom learning. The subsequent implication is on Curriculum Development. The implications of this research can also affect curriculum development by including educational technology as one of the essential components in curriculum preparation. A curriculum integrated with technology can increase the attractiveness and effectiveness of learning. The subsequent implication is on Distance Learning. In the growing context of distance learning, Room Planner and similar applications can effectively present materials interactively and facilitate collaboration between teachers and learners from a distance. Then, in the learning evaluation, technology also allows for a more in-depth evaluation of the learning process. Data generated by applications such as Room Planner can provide valuable insights for teachers in evaluating student understanding and adjusting learning methods as needed. Thus, the implications of this research go beyond the specific context of this study and can be the basis for developing more innovative and effective learning practices in the future.

Suggestions for future research that could broaden the understanding of the use of technology in learning are varied and fruitful. One is through comparative studies that compare the effectiveness of the Room Planner App with other learning technologies or even with traditional learning aids. In addition, longitudinal studies are also needed to track the impact of app use over a more extended period, providing an understanding of changes in learning outcomes and attitudes towards technology over time. Equally important is research on the influence of context in the use of Room Planner Apps, such as school type, education level, and student background. This will help in understanding how these factors affect the effectiveness of technology in learning. App development research is also needed to customize the app to the needs and preferences of teachers and students in various learning contexts. In addition to technical aspects, research on perceptions and attitudes towards using technology in learning is also essential. This can help identify possible barriers and strategies to overcome them. Integrating the Room Planner App into the curriculum also needs to be researched to ensure the relevance of learning materials to real-world needs. Finally, research on teacher professional development is also indispensable. This will ensure that teachers have the necessary skills and knowledge to integrate technology into the learning process effectively. Thus, through these various studies, it is hoped that the understanding of the use of technology in learning can be expanded and learning practices can be improved at all levels of education.

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