Development of PPKn Learning Based on an Android Application through Google Sites at SMA Negeri 1 Lembar

Rendi Zakaria*, Mohammad Mustari, Sawaludin Sawaludin, Bagdawansyah Alqadri
Faculty of Teacher Training and Education, University of Mataram
Corresponding Author e-mail*: rz17524@gmail.com

Abstract: This study aims to develop a product in the form of Civic Education (PPKn) learning media based on an Android application using Google Sites. The research method used is Research and Development (R&D) with the ADDIE development model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The results of the study, based on the evaluation of three validators—media experts, language experts, and content experts—show that the validation by media experts obtained a percentage of 93.9%, validation by language experts received 77.5%, and validation by content experts reached 92.2%. The average of the three expert evaluations is 88.1%, indicating that the Google Sites application media product is highly feasible for further development, as it falls within the 81-100% range on the Likert scale. Feedback from users, including teachers and students, showed that the teachers' response reached 81.6%, while the students' response reached 97.7%. Based on this data, it is concluded that the Civic Education (PPKn) learning media based on an Android application through Google Sites is highly feasible for use in the teaching and learning process in school

Introduction

The development of education in Indonesia continues to evolve in response to the changing times in how we learn, teach, and understand important concepts in life. Along with technological advancements, globalization, and social changes, education is undergoing significant transformation. The progress in science and technology has shifted the traditional learning paradigm into something more dynamic and interactive. With technological advancements, learning approaches must also be adapted to fully harness the potential of technology. In the development of education, it is crucial to consider how technology can be integrated with existing teaching methods to enhance the effectiveness and efficiency of the learning process.

The development of learning through Android applications represents a shift in the world of education, where teachers become role models in the learning process. This means that in the era of science and technology advancement, it is imperative for teachers to develop Android applications to enhance the quality of learning in schools. This idea is reinforced by the statement of the Director General of Teachers and Educational Personnel (Dirjen GTK) of the Ministry of Education and Culture (Kemendikbud), Iwan Syahril, who said that changes in education must be made (gurudikdas, 2020). This implies that the world of education will be different in the future, and the acceleration of technological development will create learning that keeps up with the times.

Research by Maghfirol (2022) identified issues related to changes in the education sector, particularly by developing products within education, one of which involves utilizing technology for learning, such as using Google Sites for instruction. One effort teachers can make to create an active classroom is by developing an application for the classroom, so students do not become too bored during the learning process. The teaching and learning process in the era of scientific and technological development is a process carried out by students to achieve learning objectives through Android applications, both in and outside the school environment. In this learning process, we cannot deny that there are still many problems faced by teachers and students; however, these issues serve as an evaluation for all of us to create better learning experiences in schools. Teachers and students do not necessarily have to meet face-to-face during the learning process but can also take advantage of digital technology such as computers and Android devices.

According to Law No. 18 of 2002 (RI, 2002) concerning the national system of research, development, and application of science and technology, Article 1, Paragraph 3, strategic science and technology refers to various branches of science and technology that have broad connections to the overall advancement of science and technology or have the potential to provide significant support for the well-being of students. The use of media in the development of science and technology has had a significant impact on life, particularly in the field of education (Tambunan et al., 2022). Based on the above opinion, it can be concluded that science and technology aim to create new innovations, and science has the potential to bring about changes for teachers and students in making teaching and learning activities more engaging by utilizing technology.

Kurniawati (2022) classified the quality of education in Indonesia as relatively low. The current state of education in Indonesia is quite concerning. Several issues within the Indonesian education system have contributed to the low quality of education, such as poor education management, lack of facilities, minimal government support, a conservative societal mindset, low quality of teaching resources, and weaknesses in learning assessment standards. These factors contribute to the low standard of education in Indonesia. From the explanation above, quality is essential to determine the level of success, and the same applies to the field of education. Educational quality is needed to assess the progress of education and whether it aligns with the implemented curriculum. Currently, Indonesia is using the "Merdeka" curriculum, which focuses on the development of students' character and competencies.

There are still few educators who are able to design learning media that attract students' interest, resulting in many educators using simple media, which decreases students' engagement in the learning process. Currently, educators tend to rely on conventional learning resources and media, such as blackboards, paper, markers, and textbooks. This creates a one-way teaching process, making students less interested in participating in learning activities, particularly in Civic Education (PPKn). Therefore, there is a need for learning media that can capture students' interest in the learning process, whether conducted online or face-to-face.

Reseacrh Method

This research employs the Research and Development (R&D) method. According to Okpatrioka (2023), R&D is a series of steps aimed at developing a product and testing its feasibility. The purpose of this study is to describe the development process and assess the feasibility of a product in the form of Android application-based learning through Google Sites. In line with Sugiyono's (2017) view, the R&D method is used to produce a specific product and test its practicality based on user responses.

In this study, the researcher used the R&D method because developmental research plays an important role in developing learning in accordance with the research objectives. By applying this method, the researcher will develop an Android application-based learning product through Google Sites, which will then be validated by experts. The product that will be created and developed by the researcher is Civic Education (PPKn) learning based on an Android application through Google Sites. In the development of PPKn learning using this Android application through Google Sites, the research adopts the ADDIE development model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation.

This developmental research employs a descriptive analysis method, involving both qualitative and quantitative data. The data sources are obtained from initial observation interviews with teachers, expert validation, and user responses, which include teachers and students. The interview data is analyzed in-depth using a qualitative descriptive approach, systematically arranged according to the interview instrument guidelines that have been prepared. The expert validation data and user responses (teachers) will be analyzed using the Likert scale, which is used to measure perceptions, responses, or attitudes (Sumartini et al., 2020), with a value range of 1 to 4 and specific categories.

Table 1. Likert Scale Assessment

Answer Choices	Value
Very Less	1
Less	2
Good	3
Very Good	4

User responses (students) will be processed using the Guttman scale with answer choices of "Yes" or "No." The Guttman scale has assessments with the following categories:

Table 2. Guttman Scale Assessment

Value	Description
1	Yes
0	No

Furthermore, the data analysis of the validation results from the experts (media experts, language experts, and content experts) as well as user responses (teachers and students) will be processed by calculating the average percentage of each questionnaire using the following formula.

$$Ps = \frac{S}{N} \times 100\%$$

Ps = Percentage
S = Total scor obtained
N = Maximum score

After the calculations, the data will then be converted into qualitative descriptive data with criteria according to Arikunto (in Khusna, 2021), categorized as "Very Feasible," "Feasible," "Fairly Feasible," "Less Feasible," and "Not Feasible" as follows:

Table 3. Criteria for Product Validation Levels

NO	Validation	Category
1	81% - 100%	Very Feasible
2	61% - 80%	Feasible
3	41% - 60%	Fairly Feasible
4	21% - 40%	Less Feasible
5	0% - 20%	Not Feasible

Result and Discussion

The development process of this learning application refers to the application of the Research and Development (R&D) method using the ADDIE model, which consists of the stages of analysis, design, development, implementation, and evaluation.

In the initial stage of developing the Google Sites learning media design, an analysis was conducted, including needs analysis, curriculum analysis, and student analysis. This analysis aims to collect data to identify problems that arise in PPKn learning.

After the analysis stage is completed, the next stage is the design of the Android-based learning media product, which is developed through Google Sites. In this stage, the researcher will create a content outline, develop a flowchart, and design the content of the learning media through a storyboard. Each page menu will have an icon and a header to make it easier for users. The page menu consists of home, materials, videos, assignments, submit assignments, attendance list, grade report, attendance report, vision and mission, and the product developer's profile.
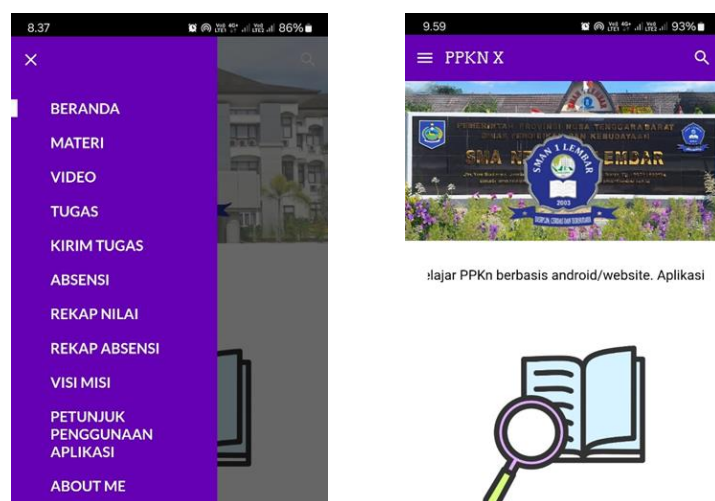

Figure 1. The homepage and main page of the application

MATERI VIDEO TUGAS KIRIM TUGAS

DAFTAR HADIR REKAP NILAI REKAP DAFTAR HADIR VISI MISI
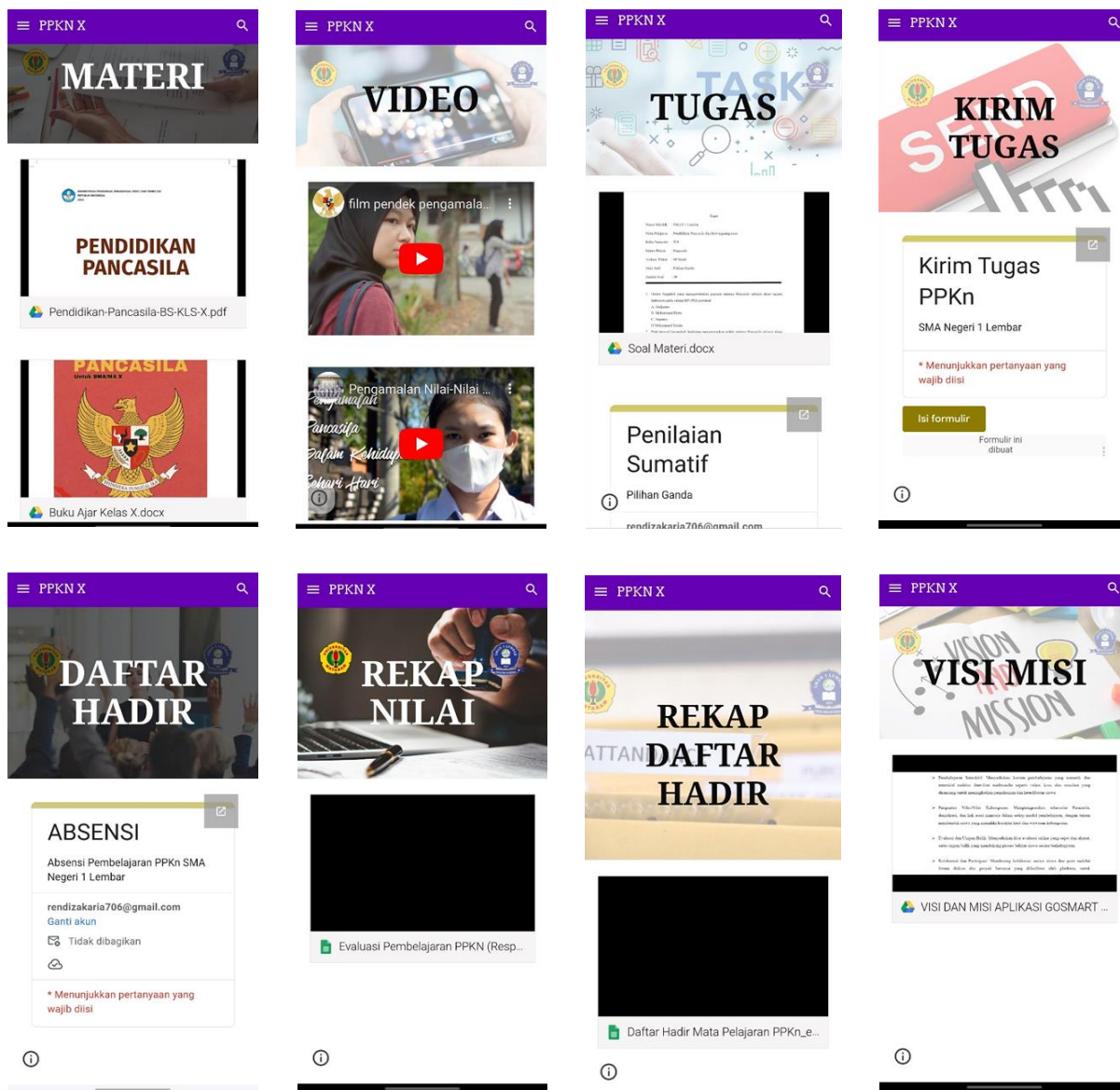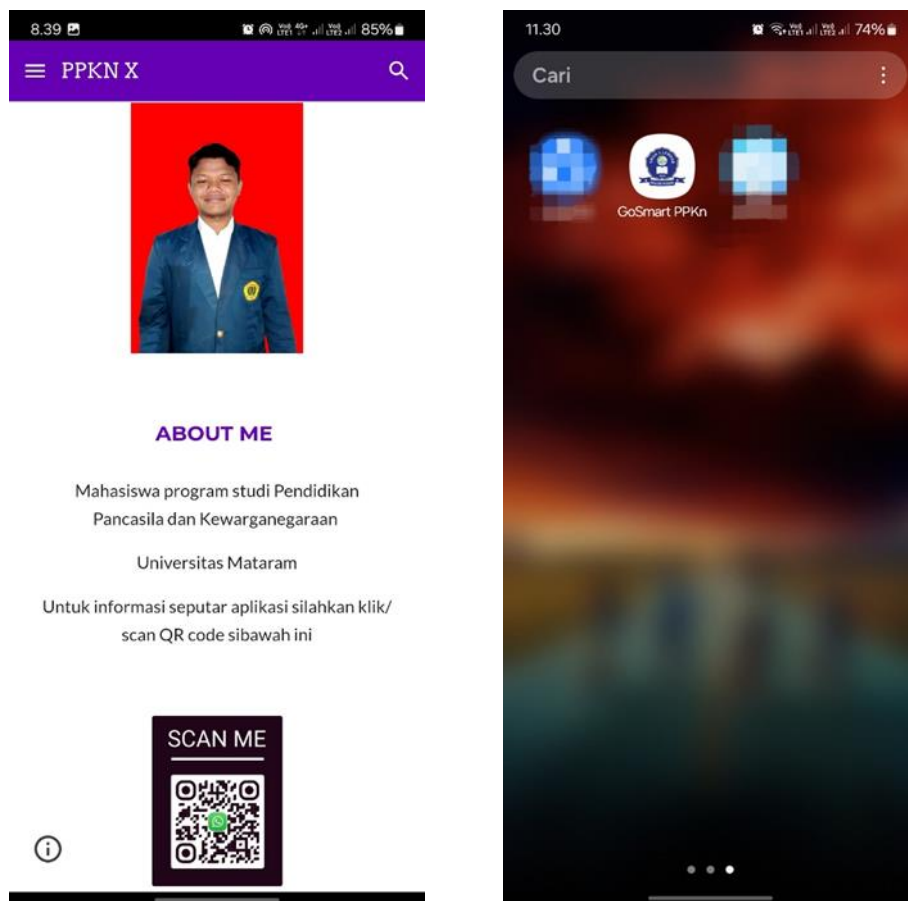
Figure 2. Application menu icons

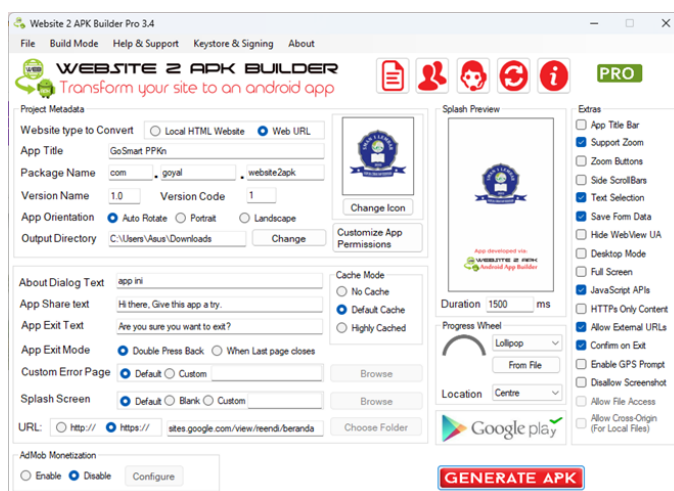**Figure 3. Application menu headers**

Figure 4. Application QR code

Figure 5. Developer profile page and the application on an android smartphone

The development stage is the third step in designing the Android-based PPKn learning media through Google Sites. In this stage, the first step is to implement the application design that has been created with the help of APK BUILDER. Next, an evaluation will be conducted based on the results from three validators, consisting of a media expert, a language expert, and a content expert.

Figure 6. Process of creating the android application

Table 4. Media expert validation results

Aspect	Ideal Score	Obtained Score	Percentage
Content Quality	16	15	93,7%
Technical Quality	36	33	91,6%
Display Quality	28	27	96,45
Average			**93,9%**

Table 5. Language expert validation results

Aspect	Ideal Score	Obtained Score	Percentage
Content Quality	40	32	77,5%
Average			**77,5%**

Table 6. Material expert validation results

Aspect	Ideal Score	Obtained Score	Percentage
Content Quality	64	55	85,9%
Instructional Quality	16	16	100%
Average			**92,9%**

Table 7. Recapitulation of expert validation

Expert/Validator	Percentage	Category
Media Expert	93,9%	Very feasible
Language Expert	77,5%	Feasible
Material Expert	92,9%	Very feasible
Average	**88,1%**	**Very Feasible**

Based on Table 7, which summarizes the expert validations, it can be concluded that the Google Sites-based Android learning media received excellent evaluations from various experts. On average, this Google Sites application received a score of 88.1%, categorized as "Very Feasible" according to the Likert scale, or within the eligibility range of 81-100%, making it suitable for use in teaching and learning activities.

The implementation stage in the development of the Android-based PPKn learning application through Google Sites involves teachers and students in applying the product or application to evaluate user responses after the feasibility validation process by experts and to make any necessary revisions.

Table 8. Result of teacher responses

Aspect	Ideal Score	Obtained Score	Percentage
GoSmart Application	60	49	81,6%
Average			**81,6%**

Based on the table above, the average percentage of teachers' responses regarding the practicality of the Android-based Google Sites learning media reached 81.6%. This result indicates that the quality of the Google Sites application can be categorized as "Very Feasible" according to the eligibility scale, which falls within the range of 81-100%.

Table 9. Results of student responses

Aspect	Ideal Score	Obtained Score	Percentage
GoSmart Application	450	440	97,7%
Rata – Rata			**97,7%**

Based on the table above, student responses to the Android-based Google Sites learning application with Pancasila material received an average response of 97.7%. This indicates that the application is "Very Feasible" according to the eligibility scale, as it falls within the range of 81-100%.

In the evaluation stage, the researcher conducted a final revision of the developed learning media based on feedback obtained from response questionnaires or notes on issues encountered during the use of the media in teaching. Based on the results of the response questionnaire and observations during the lessons, it was found that the "GoSmart PPKn" application would be more accessible with a stable internet connection.

Conclusion

The development of the Android-based PPKn learning application through Google Sites on the topic of Pancasila has the characteristic of being easily accessible anytime and anywhere, as long as there is an internet connection. Therefore, the results of the research indicate that it meets the criteria for being highly suitable for broader implementation, based on the validation from experts as well as user responses. Additionally, in the trial stage, it meets the criteria for being highly suitable as it falls within the eligibility range of 81-100%.

Recommendation

For future research, it is recommended that this learning application encompasses more subjects. Additionally, it is suggested to explore the potential for integrating other technologies to provide variety and flexibility in the learning process, as well as to enhance the effectiveness of using Google Sites-based learning media. Schools are encouraged to provide support and adequate resources, involving teachers in developing their skills in using educational technology.

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