

## Design Android-Based E-book Application for Sundanese *Pupujian* Teaching Materials

Ipan Ripai<sup>1(\*)</sup>, Opah Ropiah<sup>2</sup>, Fajar Sukma Nur Alam<sup>3</sup>

<sup>1,2,3</sup>STKIP Muhammadiyah Kuningan, Kuningan, Indonesia

Jl. R.A Moertasiah Soepomo No.28B Kuningan Jawa Barat, 45511

---

### Abstract

Received: December 11, 2021  
Revised: March 20, 2022  
Accepted: April 1, 2022

An android-based e-book application for teaching materials is a type of electronic book in softcopy. This study aims to design an android-based e-book application for *Pupujian* Sundanese teaching materials and determine its feasibility. This research is development research (R&D). The flow in this research are: 1) potential problems; 2) data collection; 3) product design; 4) design validation; 5) design revision; 6) product trial; 7) product revision; 8) trial use; 9) product revision; 10) mass production. Based on design validation, this application is feasible to test because the percentage is 85.00% - 100.00%. This product was tested on students of the Regional Language and Literature Education Study Program, Muhammadiyah Kuningan School of Teacher Training and Education. Based on the pretest and posttest results, the average value of the pretest was 6.42, while the posttest obtained an average value of 77.21. It can be concluded that the android-based e-book application for Sundanese *Pupujian* teaching materials is "appropriate" to be implemented in learning and can be mass-produced.

**Keywords:** E-books, Teaching materials, Sundanese *Pupujian*

(\*) Corresponding Author: [ipan@upmk.ac.id](mailto:ipan@upmk.ac.id)

**How to Cite:** Ripai, I., Ropiah, O., & Sukma Nur Alam, F. (2022). Design Android-Based E-book Application for Sundanese *Pupujian* Teaching Materials. *JTP - Jurnal Teknologi Pendidikan*, 24(1), 63-78. <https://doi.org/10.21009/jtp.v24i1.24456>

---

## INTRODUCTION

*Pupujian* is one of the old literary works in Sundanese culture. *Pupujian* is usually sung in mosques and prayer rooms while waiting for prayer time. Iskandarwassid (2013:120), states that *pupujian* is a "Panyelang." *Pupujian* is usually a poem or verse with four lines and *purwakanti* (Rosidi, 2011:89). *Pupujian* is also old literature that is bound by the rules of writing. Judging from the media, *pupujian* developed through word of mouth or verbally. Sundanese society is often called (*dikawihkeun*) and memorized by those who listen to it. According to Isnendes (Ropiah & Rifai, 2020:127), *pupujian* is a tradition that contains the majesty of God, prayers to the prophet or messenger of Allah, reprimands, or directions to humans to carry out worship. In the learning process, students still experience problems related to obtaining reading sourcebooks about *pupujian*. It isn't easy to find even though the Sundanese *pupujian* teaching materials are already in the library and accessed through website blogs.

Teaching materials are a set of systematically arranged materials, whether written or not so that an environment or atmosphere creates the ability of students to learn (Jumrah, 2019:25). Teaching materials are media that lecturers and students can use during the learning process, and these teaching materials can be in the form of writing or not (Majid, 2011:173). According Stewart (Dela Fuente, 2021:26), teaching materials are essential because they can create active interactions between teachers and students. The

use of teaching materials is necessary because it helps teachers achieve instructional goals (Setyowati & Sukmawan, 2019:68). These teaching materials must be adapted to the increasingly rapid progress of the times; the development of science and technology increasingly encourages reform efforts to use technological results in the learning process (Silva et al., 2019:312). This is in line with the opinion of Hoyles & Lagrange (Putrawangsa & Hasanah, 2018:43), that in today's era, technology is the most influencing aspect of the education system. Technology makes it easy for users to do things in notes or written text in specific applications (Haristiani & Rifai, 2021:563). Teaching materials must be of the needs and must be of good quality. According to Geena & Petty (Sudaryat, 2015:232), quality teaching materials must have a clear direction of thought, be useful for the curriculum, be able to attract student interest, respond to activities, be communicative and also be able to respect the diverse individual. According to Budiman (Wahyuni, 2015:301), teaching materials must be made regularly using language that is easy to understand according to cognitive level. A sophisticated tool or media is needed to facilitate students obtaining Sundanese *pupujian* teaching resources in technological development; students and lecturers can easily access that. One of the advanced technologies used in the learning process is android. Because android is a tool that students have widely used, it is even considered a primary need.

Android is an operating system (OS) for Linux-based mobile devices that includes an operating system, middleware, and applications. It is an open-source platform that allows developers to create applications quickly and can be used by various mobile devices (Qumillaila et al., 2015:59). Android is the best technology at this time because Android is a technology that has many interesting features (Taqwa et al., 2019:226). One of the features that can be accessed and obtained on Android is an e-book application. According to (Purwandari, 2020:2), the e-book is an abbreviation of an electronic book which is an electronic book in the form of softcopy that can be accessed via computers and androids. Obtaining an Android-based e-book can be downloaded and installed via the Play Store. The feasibility of the e-book media itself can be measured and assessed through the application's appearance, functional buttons, and the operation of the application (Maulana, 2015:18). Android-based e-book application already exists in the Playstore, namely *nadoman Khulasoh Bahasa Sunda* and the song *syiiran nadoman*. The difference between the e-book application in this study and the existing application in the play store is that there is material related to *pupujian*, there are examples of *pupujian*, and there is an evaluation of the understanding of *pupujian*. The Android-based e-book application is expected to be a teaching material that can attract students' interest in studying *pupujian*.

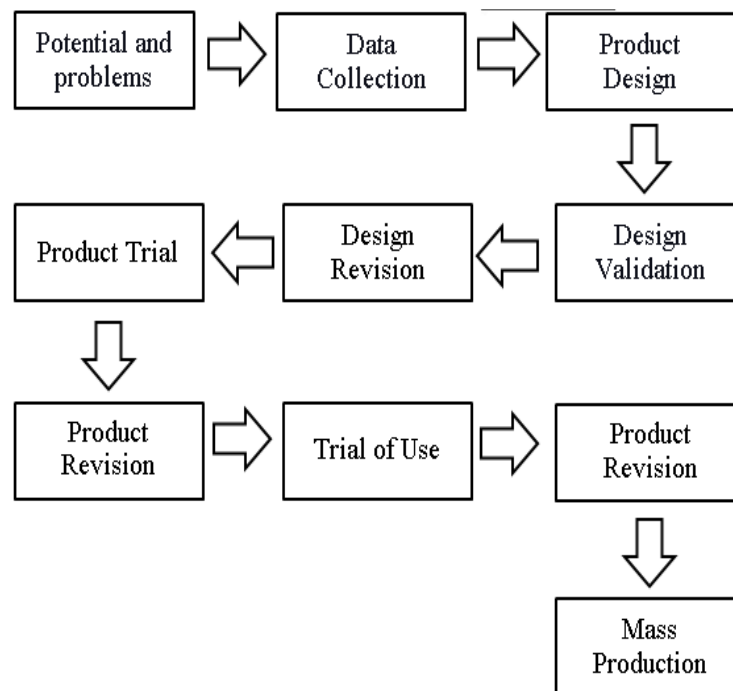
Several similar studies have been conducted previously regarding the application of Android-based e-books, including research conducted by Muhammad, Rahadian, Safitri (2015) with the research title "*Penggunaan Digital Book Berbasis Android untuk Meningkatkan Motivasi dan Keterampilan Membaca pada Pelajaran Bahasa Arab*". Another study by Silva, Purnomo, and Zuhri (2019) entitled "*Efektivitas Pendekatan Konstruktivisme Berbantu Media E-Book Berbasis Android terhadap Hasil Belajar Ditinjau dari Gaya Belajar pada Siswa Kelas X di SMKN 11 Semarang*". Based on previous research on Android-based e-books, no one has used an Android-based e-book application for Sundanese *pupujian* teaching materials. Therefore, this research is fundamental because it is an innovation for teaching materials for Sundanese language or literature that users can easily access anywhere and anytime. After all, they are available in electronic media.

Based on the background that has been described, the formulation of the problem in this study are: 1) how is the process of developing an android-based e-book application using Sugiyono's research flow for Sundanese *pupujian* teaching materials; 2) how is the

feasibility of an android-based e-book application for Sundanese *pupujian* teaching materials. This study aims to design an Android-based e-book application in which there is material about the Sundanese *pupujian/nadoman* son of Adam and then test its feasibility.

## METHODS

The design of an Android-based e-book application is development research (R&D). According to Gay (Hanafi, 2017:133), development research is a study that develops a product. According to Sugiyono (Hermanto et al., 2015:16), development research is the method used to produce a product and test the product's feasibility. The sampling technique is carried out using purposive sampling, namely sampling based on specific characteristics or traits estimated to have a close relationship with the characteristics or qualities that exist in the population previously known (Narbuko & Achmadi, 2011:17). The sample in this study was the 4th-semester students of the Regional Language and Literature Education Study Program, STKIP Muhammadiyah Kuningan. Data collection techniques using observation, documentation, and tests. Meanwhile, the validity test (validation) was carried out by material and media experts, normality test, homogeneity test, and hypothesis testing for data analysts. According to Sugiyono (2013:298), the research flow can be seen in Figure 1.



**Figure 1.** Research Flow

1. Potential and problems, the analysis is seen from the teaching materials, the learning process in the classroom, learning media, students, and the student learning environment.
2. Data collection: The data collected is the *pupujian/Nadoman Anak Adam* teaching material to be used as an Android-based e-book. The collection of information related to Sundanese *pupujian* materials was obtained from material books on

literature. Examples of Sundanese *pupujian* or *Nadoman Anak Adam* are obtained from the book *Nadoman Anak Adam*, and the writing uses Arabic letters while the language uses Sundanese.

3. Product design, At the design stage, researchers collect information related to learning/reference sources in the form of Sundanese *pupujian* materials from reference books and *Nadoman Anak Adam's* book. The product design stage designs Sundanese *pupujian* to become an Android-based e-book teaching material. Haris (Fitriani & Rohayati, 2013:13), stated that e-books are electronic books in which text or images are presented in a digital format, which can be accessed by anyone. The android-based e-book design presents Sundanese *pupujian* and examples of Sundanese *pupujian* or *Nadoman Anak Adam*.
4. Design validation was carried out to material experts and media experts. Before the research, this design validation was used to determine whether the Android-based e-book media or teaching materials for Sundanese *pupujian* teaching materials were feasible or not used in product trials. Design validation using Akbar's reference formula (Patmawati, 2016:96), is carried out by:
  - a. Calculating the validity score with the formula:

$$\text{Validity (V)} = \frac{\text{Total validation score}}{\text{Max total core}} \times 100\%$$

- b. The results of the above are matched with the main reference validation criteria table:

**Table 1.** Criteria for Validation of Material and Media Experts

No	Score	Validity Criteria
1.	85,01 – 100,00 %	Very Worthy
2.	70,01 – 85,00 %	Decent enough
3.	50,01 – 70,00 %	Less worthy
4.	01,00 – 50,00 %	Not feasible

5. Design revision, at this stage, improves the teaching materials' design for the *Nadoman Anak Adam* using an Android-based e-book.
6. Product Trial, Product trial of *pupujian/Nadoman Anak Adam* teaching materials using android-based e-books for lecturers and students who contracted the Old Literary History course. After the trial, to determine the students' understanding before and after using the *pupujian* teaching materials using e-books in the old literature course, the researchers analyzed the data using normality, homogeneity, and hypothesis testing. The SPSS.26 program assisted the data analysis in this study.
7. Product revision, namely revising the product tested as an evaluation material or improvement of teaching materials.
8. Trial of use, in addition to the Regional Language Education study program, this product is tested for use in other study programs.
9. Product revision.
10. Mass production, namely *pupujian/Nadoman Anak Adam* teaching materials using Android-based e-books, can be mass-produced.

## RESULTS & DISCUSSION

At the stage of analyzing problems in the field related to the Sundanese *pupujian* material and the learning media used in the old literary history course. Researchers used

literature studies and field studies. The material analysis is seen from the Semester Learning Plan (RPS) used in the old literary history course in the Regional Language and Literature Education study program at STKIP Muhammadiyah Kuningan. In addition, evaluations related to implementing the old literary history course are carried out by looking at the history of lecturer evaluations by students in the previous semester related to old literary history lectures.

### Design Validation

Validation of media and material design using Akbar's reference formula (Fatmawati, 2016:96), obtained the following results:

$$\text{Validity (V)} = \frac{\text{Total validation score}}{\text{Max total core}} \times 100\%$$

$$(V) = \frac{93}{110} \times 100\% = 89\%$$

Meanwhile, for material validation, the values obtained are:

$$\text{Validity (V)} = \frac{\text{Total validation score}}{\text{Max total core}} = X \times 100\%$$

$$(V) = \frac{92}{95} \times 100\% = 88\%.$$

### Design Revision

Design validation was carried out after validation from experts related to the design of Sundanese *pupujian* teaching materials using an Android-based e-book. Design revisions were made on the advice of the validator's assessment. The suggestions are as follows:

1. Revision of the media validator: the use of fonts was adjusted to make it easier to read, the function of the keys to be further refined, and the spelling writing to be improved, such as the use of spaces for each word capital letters.
2. Revised material validator: language should use two languages so that there is a transliteration process from Sundanese to Indonesian.

### Product Trial

The trial was conducted on Regional Language and Literature Education students in STKIP Muhammadiyah Kuningan semester 4. The results of the pretest students before using the android-based e-book application obtained an average pretest score of 56.42. Meanwhile, after using an Android-based e-book application, the average posttest value was 77.21. The data analysis used in this research is normality test, homogeneity test and hypothesis testing.

#### Normality test

According to Umar (Waspodo et al., 2013:105), the normality test is used to determine the attachment of a variable. In this study, the normality test was used with the One-Sample Kolmogorov Smirnov using SPSS.26. the results obtained a significance value of  $0.200 > 0.05$ .

#### Homogeneity Test

Sugiyono (Ramadan & Triwahyuni, 2020:132), the homogeneity test tests two data with a definite distribution. The results in the homogeneity test obtained a value based on the mean, namely  $0.015 > 0.05$ .

### **Hypothesis testing**

The hypothesis test used in this research is the paired sample t-test using the SPSS 26 program. The sig value is obtained. (2-tailed) that is  $0.000 < 0.05$ .

### **Product Revision**

At this stage, the researcher revised again to find out the lack of Sundanese *Pupujian* teaching materials using an android-based e-book after being used in trial activities. The revision is that several writings in the text of *pupujian* are small in size, so that they must be revised so that all students can see them.

### **Tria Usage**

The use trial was also used on *pupujian* material in other study programs studying Regional Language Education courses that presented Sundanese *pupujian* material.

### **Product Revision**

The product revision was done by perfecting the Sundanese *pupujian* teaching materials using an Android-based e-book to be ready for mass production by uploading them to the play store. There are no further revisions for the *pupujian/Nadoman Anak Adam* application product.

### **Mass Production**

Producing Sundanese *pupujian* teaching materials using an Android-based e-book can already be mass-produced and applied at STKIP Muhammadiyah in particular and, in general, all people who want to understand Sundanese *pupujian* is being planned to be uploaded on the play store. The product description is as follows:

1. Main Page

The main page is the opening page of the *pupujian/Nadoman Anak Adam* application. The appearance is as follows:



**Figure 2.** The main page of *Nadoman Anak Adam's* E-book

2. Menu About Application

Sundanese *pupujian/Nadoman Anak Adam* uses an android-based e-book application. The main page can be seen in Figure 3.



Figure 3. Menu About Applications

3. Menu Course

The main menu consists of a display of the menus of the material to be studied which consists of a) understanding of *pupujian*; b) history of *pupujian*; c) characteristics of *pupujian*; d) form of *pupujian*; e) function of *pupujian*; f) types of *pupujian*; g) Contents of *pupujian*; h) Variety of *pupujian* language; i) *Nadoman Anak Adam*; and j) Closing. The appearance can be seen in Figure 4.



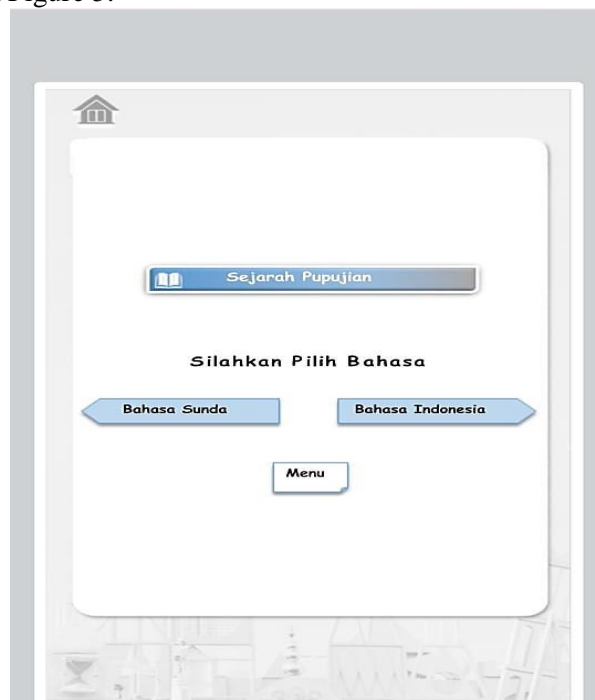
Figure 4. The Main Menu of the *Pupujian* E-book

- a. Menu Material Understanding *Pupujian*  
The menu of understanding material explains *pupujian* meaning, consisting of two languages, namely the regional language (Sundanese) and Indonesian. The appearance is as follows :



**Figure 5.** Material Understanding *Pupujian*

- b. *Pupujian* History Material Menu  
Explain the material development of Sundanese *pupujian* history. The appearance can be seen in Figure 5.

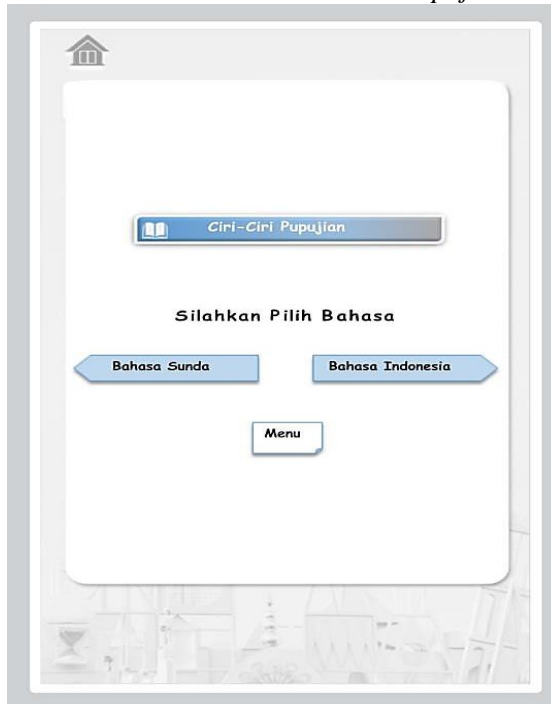


**Figure 6.** *Pupujian* History Material Menu



c. Menu Material Features of *Pupujian*

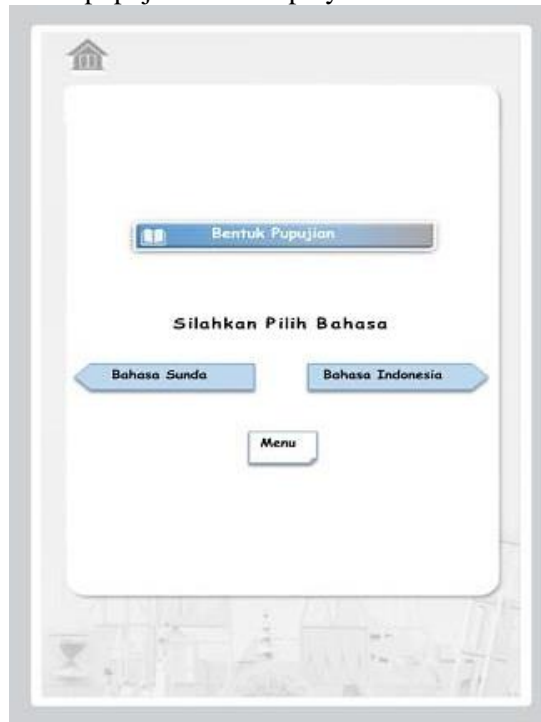
Explain about the characteristics of sundanese *Pupujian*



**Figure 7.** Menu Material features of *Pupujian*

d. The Material Menu for

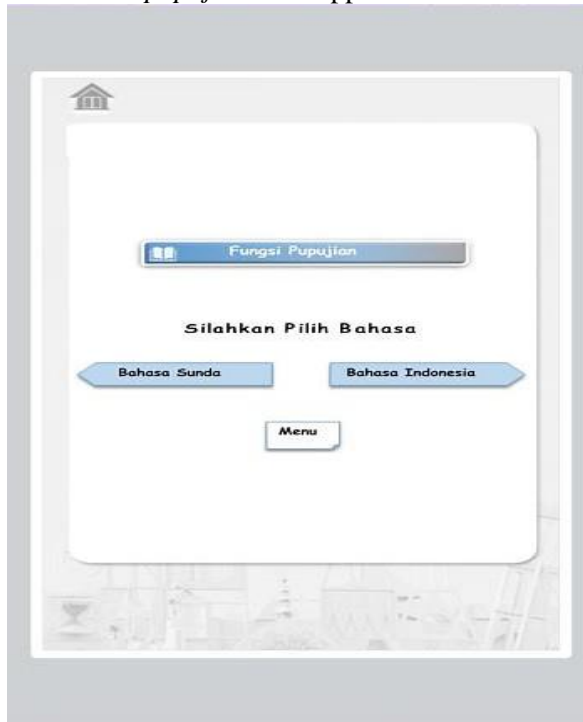
Explain the form of pupujian. The display can be seen in Figure 8.



**Figure 8.** Material Menu for the Form of *Pupujian*

e. Material Menu *Pupujian* Function

Explain the function of *pupujian*. The appearance is as follows:



**Figure 9.** The Material Menu for the *Pupujian* Function

f. Menu Material Types of *Pupujian*

Explain the types of *pupjian*. The appearance is as follows:



**Figure 10.** Menu Material Types of *Pupujian*

g. Menu Content of *Pupujian*

Explain the content of the *pupujian*. The appearance can be seen in Figure 11.

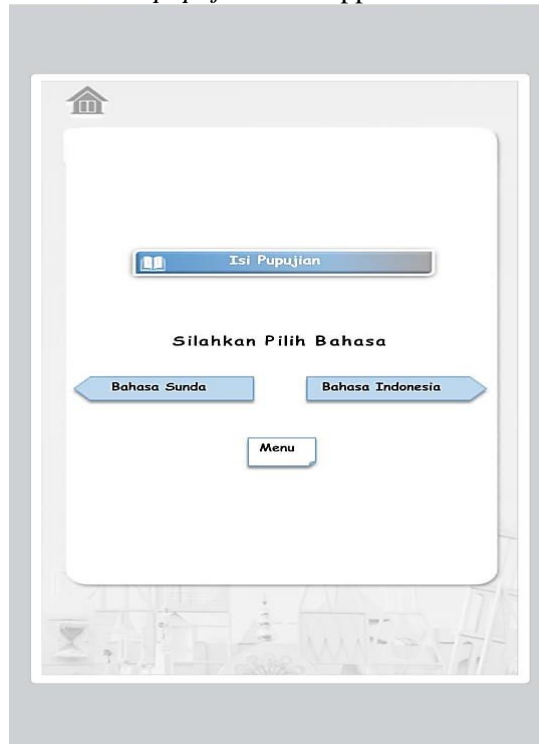


Figure 11. Menu Contents of *Pupujian* Contents

h. Menu Material Variety of *Pupujian* Language

Explain the various languages of *pupujian*. The appearance is as follows:



Figure 12. Menu Of Material Variety of *Pupujian* Language

i. Menu Material *Nadoman Anak Adam*

*Nadoman Anak Adam's* material menu describes an example of Sundanese *pupujian*, namely *Nadoman Anak Adam*. The appearance is as follows:



Figure 13. Menu Material *Nadoman Anak Adam*

j. Closing Menu

The closing menu is the closing part of applying Sundanese *pupujian* teaching materials / *Nadoman Anak Adam* using an Android-based e-book. A thank you to all parties involved in the preparation of this application. The appearance is as follows:



Figure 14. Closing Menu

This discussion presents the overall design of an Android-based e-book application for Sundanese *pupujian* teaching materials using development research (R&D) with a research flow according to Sugiyono (2013:298). This research begins with the problems and potentials in the Muhammadiyah College and Teacher Training Program (STKIP) for the 4th semester of the Regional Language and Literature Education Study Program, which teaches old literature courses. The teaching materials on campus are still in the form of printed books provided in the library in limited quantities. This causes students' understanding in recognizing Sundanese *pupujian* is very lacking due to inadequate media or teaching materials. Munadi (Muhammad et al., 2015:172) states that the new education system demands new factors and conditions about physical and non-physical facilities. Educators must use equipment or teaching materials that are more effective and efficient. The potential in this research is to develop Sundanese *pupujian* teaching materials which are innovative, creative, effective, and efficient so that these teaching materials can be accessed easily by students and lecturers. The teaching material is an e-book about Sundanese hymns packaged in an electronic device that can be accessed anywhere and anytime. This is in line with the opinion of Winters (Fitriani & Rohayati, 2019:16) "Mobile learning refers to any form of learning mediated through a mobile device, which can take place anywhere, anytime and at the convenience of the learners." In addition, with this e-book, it is hoped that it can help students learn material that is incomplete in textbooks.

After analyzing the potential and problems, the researcher designed an android-based e-book application for Sundanese *pupujian* teaching materials, consisting of the main page of the adam child *pupujian* e-book, a menu about applications, and a material and a closing menu. The material contained in this e-book includes: 1) the meaning of *pupujian*, 2) the history of *pupujian*, 3) the characteristics of *pupujian*, 4) the form of *pupujian*, 5) the function of *pupujian*, 6) types of *pupujian*, 7) the content of *pupujian*, 8) Variety of Languages of *pupujian*, 9) Nadoman Son of Adam. Nadom (Sundanese *pupujian*) is a series of words or sentences in which there are stanzas, lines and lines or in Sundanese known as Padalisan, nadom, or Sundanese *pupujian* can be used as an educational medium commonly used in Sundanese language material or Sundanese literature that can be sung (Syafe'i et al., 2021:109).

After the android-based e-book application for Sundanese *pupujian* teaching materials was created, the next stage was to validate the product design to fabric and media experts to determine whether the product was suitable for use. Two expert validators carried the product validation, namely STKIP Muhammadiyah Kuningan lecturers. At the validation stage in this study, a percentage score of 89% was obtained. In contrast, for material validation, a percentage score was 88%; it can be concluded that the media and materials in this study can be included in very valid criteria because the score obtained is at a percentage of 85.01% - 100.00%. After the validation test, several points must be revised from the android-based e-book application product for Sundanese *pupujian* teaching materials, including from the material validator. Namely, the language should use two languages to transliterate the process from Sundanese to Indonesian. In contrast, the media validator provides input on adjusted fonts to make them easier to read, key functions to be further refined, and spelling to be improved, such as the use of spaces for each capital letter word.

After validation of the product to experts and revisions are made, the Android-based e-book application for Sundanese *pupujian* teaching materials can be tested for feasibility. Respondents in the product feasibility test were students of STKIP Muhammadiyah Study Program of Regional Language and Literature Education semester 4. Collecting data to test android-based e-book products using a student understanding test sheet of Sundanese *pupujian* material. Students were given a pretest and posttest

questions before and after implementing the use Android-based e-book application for teaching materials on Sundanese *pupujian* material. After the product was tested and there was an increase in the results of student understanding in the pretest and posttest, the researcher revised the product to perfect the e-book application so that the product could be used properly by lecturers and students and could be tested for use in other study programs. Who learns about Sundanese *pupujian* material? After going through several stages of an Android-based e-book application, it can be uploaded to the Playstore and is ready for mass production. It can be concluded that an Android-based e-book application for Sundanese *pupujian* teaching materials is considered "worthy" to be implemented as a teaching tool for lecturers to deliver Sundanese *pupujian* material to students.

## CONCLUSION

Based on the results of the design of an Android-based e-book application for Sundanese *pupujian* teaching materials, it can be concluded that designing a media requires a process that is not short, from the initial process of looking for potential problems to mass-producing the teaching materials. In addition, based on the results tested through data collection techniques with a one-group pretest-posttest design, it shows that e-book-based learning media can be used to improve students' understanding and ability in old literary history courses. Therefore, an Android-based e-book application for Sundanese *pupujian* teaching materials can be implemented and is suitable for use in the learning and learning process.

## CONFLICT OF INTEREST

During the registration, review, and publication processes, there were no conflicts between researchers, research subjects, journal managers, and research sites.

## ACKNOWLEDGEMENT

Thanks are given to:

1. Director General of Research and Development Strengthening (DPRM) of the Ministry of Research and Higher Education (Kemenristekdikti) funded this research.
2. The Chairperson of the Muhammadiyah Kuningan School of Teacher Training and Education (STKIP) and their staff supported this research activity.
3. Institute for Research and Community Service (LPPM) STKIP Muhammadiyah Kuningan.
4. All parties involved in this research.

## REFERENCES

- Dela Fuente, J. A. (2021). Facebook Messenger as an Educational Platform to Scaffold Deaf Students' Conceptual Understanding in Environmental Science Subject: A Single Group Quasi-Experimental Study. *International Journal of Education*, 14(1), 19–29. <https://doi.org/10.17509/ije.v14i1.31386>
- Fitriani, I., & Rohayati, S. (2019). Pengembangan E-book Berbasis Android dengan Pendekatan Saintifik pada Mata Pelajaran Administrasi Pajak Kelas XII Akuntansi di SMK Negeri 2 Bubuduran. *Jurnal Pendidikan Akuntansi*, 7(1), 11–20.
- Hanafi. (2017). Konsep Penelitian R&D Dalam Bidang Pendidikan. *Jurnal Kajian*

- Keislaman*, 4(2), 129–150. <http://www.aftanalisis.com>
- Haristiani, N., & Rifai, M. M. (2021). Chatbot-Based Application Development and Implementation as an Autonomous Language Learning Medium. *Indonesian Journal of Science and Technology*, 6(3), 561–576. <https://doi.org/10.17509/ijost.v6i3.39150>
- Hermanto, Wiyono, B., Imron, A., & Arifin, I. (2015). *Analisis Potensi dan Masalah pada Fase Konseptualisasi Pengembangan Model Supervisi Pembelajaran di sekolah dasar inklusi*. 14–30.
- Iskandarwassid. (2013). Kamus Istilah Sastra. In *Bandung: CV Geger Sunten*.
- Jumrah. (2019). Developing an intensive course model in improving english language skills of students of early childhood islamic education department (PIAUD). *International Journal of Language Education*, 3(1), 22–32. <https://doi.org/10.26858/ijole.v1i1.7435>
- Majid, A. (2011). *Perencanaan Pembelajaran (Mengembangkan Standar Kompetensi Guru)*. Bandung: PT Remaja Rosdakarya.
- Maulana, Z. B. (2015). Rancang Bangun aplikasi e-book Berbasis Adroid sebagai Media Pembelajaran Mengoperasikan Sistem Pengendali Elektromagnetik Untuk Siswa Menengah Kejuruan Dr.Tjipti Semarang. *Edu ElektriKa Journal*, 4(2), 27–34. <https://doi.org/doi:https://doi.org/10.15294/ej.v5i2.23223>
- Muhammad, M., Rahadian, D., & Safitri, E. R. (2015). Penggunaan Digital Book Berbasis Android Untuk Pada Pelajaran Bahasa Arab. *PEDAGOGIA : Jurnal Ilmu Pendidikan*, 170–182.
- Narbuko, C., & Achmadi, A. (2011). Teori Metodologi Penelitian. In *Bumi Aksara*.
- Patmawati, A. (2016). Pengembangan Perangkat Pembelajaran Konsep Pencemaran Lingkungan Model Pembelajaran Berdasarkan Masalah Untuk SMA Kelas X. *EduSains*, 4(2), 94–103.
- Purwandari, S. (2020). Pemanfaatan Aplikasi E-Book Kurikulum 13 Sma Dan Smk. *Jurnal Sainstech*, 7(1), 59–63.
- Putrawangsa, S., & Hasanah, U. (2018). Integrasi Teknologi Digital Dalam Pembelajaran Di Era Industri 4.0. *Jurnal Tatsqif*, 16(1), 42–54. <https://doi.org/10.20414/jtq.v16i1.203>
- Qumillaila, Q., Susanti, B., & Zulfiani, Z. (2015). Pengembangan Augmented Reality Versi Android Sebagai Media Pembelajaran Sistem Ekskresi Manusia Developing Android Augmented Reality As a Learning Media of. *Jurnal Cakrawala Pendidikan*, 1(1), 57–69. <https://journal.uny.ac.id/index.php/cp/article/view/9786/pdf>
- Ramadan, E., & Triwahyuni, H. (2020). Efektivitas Pembelajaran Menyimak Dongeng Berbasis Youtube Dalam Pembelajaran Bahasa Sunda Pada Masa Pandemi Covid-19. *Indonesian Journal of Science*, 1(1), 18–26.
- Ropiah, O., & Rifai, I. (2020). Pengaruh Penggunaan Multimedia Interaktif terhadap Kemampuan Pemahaman Pupujian Sunda. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, 8(3), 125–130. <http://journal.umpo.ac.id/index.php/dimensi/article/view/2080/1563>
- Rosidi, A. (2011). *Sawér jeung Pupujian*. Bandung : PT Kiblat Buku Utama.
- Setyowati, L., & Sukmawan, S. (2019). Authentic Materials for Teaching Writing: A Critical Look. *International Journal of Language Education*, 3(2), 68–77. <https://doi.org/10.26858/ijole.v3i2.9609>
- Silva, I. P., Purnomo, D., & Zuhri, M. S. (2019). Efektivitas Pendekatan Konstruktivisme Berbantu Media E-Book Berbasis Android terhadap Hasil Belajar Ditinjau dari Gaya Belajar pada Siswa Kelas X di SMKN 11 Semarang. *Imajiner: Jurnal Matematika Dan Pendidikan Matematika*, 1(6), 310–316.

<https://doi.org/10.26877/imajiner.v1i6.4859>

- Sugiyono. (2013). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Syafe'i, A., Taufik, D. P., Awaliyah, S., Rasyid, yugi aulia, & Gamayanti, W. (2021). Implementasi Metode Nadzom Untuk Meningkatkan Minat Belajar Ilmu Agama Bagi Anak-Anak Di Masa Pandemi (Learning Religious Science For Children In Pandemic Times). *Proceedings UIN Sunan Gunung Djati Bandung, 1*(Desember).
- Taqwa, M. R. A., Utami, Y. A., & Rivaldo, L. (2019). Pengembangan Buku Siswa Elektronik Berbasis Android pada Materi Suhu dan Kalor untuk Persiapan Ujian Nasional SMA/MA. *BRILIANT: Jurnal Riser Dan Konseptual, 4*(1), 225–234. <https://doi.org/http://dx.doi.org/10.28926/briliant.v4i2.318>
- Wahyuni, S. (2015). Pengembangan Petunjuk Praktikum Ipa Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Smp. *Jurnal Pengajaran Matematika Dan Ilmu Pengetahuan Alam, 6*(1), 196. <https://doi.org/10.18269/jpmipa.v20i2.585>
- Waspodo, A. A., Handayani, N. C., & Paramita, W. (2013). Pengaruh Kepuasan Kerja dan Stres Kerja terhadap Turnover Intention pada Karyawan PT. Unitex di Bogor. *Jurnal Riset Manajemen Sains Indonesia (JRMSI), 4*(1), 97–115.