

## **Development of Electronic Learning Media Book Voice Text Based: The 1st Presidential Election 2017**

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### **Abstract**

This study aims to develop Pancasila learning media into an electronic book based on voice text so that it is expected to increase students' learning motivation. The second objective is to determine the feasibility of developing electronic book media based on voice text. The research method uses Research and Development with the stages of Analysis, Design, Development Implementation, and Evaluation (ADDIE). The effectiveness of the media is obtained from the evaluation results of Based on expert validation, electronic book media based on voice text gets an average percentage score of 89% with a very feasible category and the average validation of electronic book material based on voice text gets a score of 92% with a very appropriate category and in terms of user practicality gets a score of 88% with a very appropriate category.

**Keywords:** Learning Media, Electronic Books, and Voice Text



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### **INTRODUCTION**

The use of technology is growing rapidly in human life. Technology plays a significant role in the process of human life. The existence of technology can make it easier for humans to carry out all activities. The development of technology also has an impact on the world of education. The impact of technology in the world of education can facilitate teaching and learning activities. Teaching and learning activities are currently shifting to learning in the era of society 5.0. Learning does not only use conventional methods but also uses online technology or internet-based networks. The government has currently made various policies to encourage various breakthroughs in the use of learning models that tend to use information technology in the learning process. Based on research, the use of technology in learning can improve students' abilities (Aminudin, 2018: 297). Technology-based learning makes it easier for educators and students to gain access to the material being studied. Technological advances can also facilitate communication between educators and students so that it will help improve the quality of teaching and learning activities (Amar, 2012).

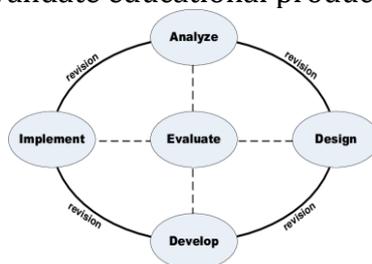
The use of technology in teaching and learning activities can also increase learning motivation. According to Unik and Niar (2021), the reasons for using technology in teaching and learning activities are as follows: (1) on the psychological side, students' development likes to use smartphones in their daily lives; (2) Many Indonesian people already have smartphones; (3) Technology-based teaching materials can be created and duplicated quickly; (4) learning materials can be studied at any time. The problem that arises in the use of technology in education is the wasteful use of students' internet quota. Much of this internet quota usage is due to the learning given to students still being virtual synchronous using media such as zoom meetings, google meetings, microsoft teams and webex. Learning by utilizing technology such as e-learning and google classroom is also considered to use a lot of internet quota every time

you access the page. The solution to overcome the use of the internet is to share teaching materials in the form of pdf or commonly called electronic books. New problems arise because the design of conventional ebooks is boring so that students' motivation to read the teaching materials is reduced. To overcome this, innovation is needed in making ebooks so that it can increase students' learning motivation.

Innovations that can be done in learning are more appropriate by using electronic books based on voice text. The book is not the same as electronic books in general, but is programmed according to the presentation of interesting materials and is made based on voice. The program is equipped with a graphical, interactive, and navigation base that makes it easier for students to read and study it. The electronic book based on voice text is attempted to be studied offline so as to reduce the use of internet quota. Assignments can be done online with other embedded programs so that they can be monitored by lecturers and at the same time become student evaluation materials. Pancasila learning at Universitas PGRI Yogyakarta using voice text-based ebooks can motivate students if combined with a brain learning system and fun learning. Brain learning by optimizing the right and left brain by combining graphics, colors, text, and audio in the form of ebooks. Fun learning by combining interactive and easy-to-operate navigation. The development of learning media with various variations will increase student competence (Trimurtini et al., 2019: 695). The Pancasila ebook based on voice text is a solution to the learning media problems at Universitas PGRI Yogyakarta. The digitalization reduces the use of quotas to operate the learning process, and makes it easier for students to use media. The learning process can be carried out anywhere, using smartphones that are very familiar to students. The use of the Pancasila ebook based on voice text is expected to increase students' interest in learning.

## RESEARCH METHODS

This research was conducted in the Accounting B study program and the Special Education B study program of Universitas PGRI Yogyakarta, totaling 10 people. The object of this research is the electronic book of the Pancasila course based on voice text. This research will be conducted using the Research and Development (R&D) method with a qualitative approach. This research and development model uses ADDIE (Analysis, Design, Development, Implementation and, evaluation) from Dick and Carry. Development research is a research design that aims to develop and validate educational products that are made (Sugiono, 2019).



**Figure 1. ADDIE Development Steps**

Data collection techniques use observation, interviews, questionnaires, and documentation. To determine the feasibility of the material and the feasibility of the media using validation from Material Experts and Media Experts. Data analysis techniques in research and development use two methods, namely quantitative descriptive analysis and needs analysis in the form of Likert scale scores and percentage techniques. Based on Figure 1, it can be explained that the ADDIE stage consists of analyzing existing problems, designing needs, then continuing with designing the design of the media product, developing the media, implementing and conducting evaluations at each stage. The scale used in this study is the

Linkert scale using scores (1) Not Eligible; (2) Less Eligible; (3) Quite Eligible; (4) Eligible; and (5) Very Eligible. In order to find out the results, a descriptive quantitative calculation is used using the percentage formula with the following formula:

$$\text{Percentage (\%)} = \frac{\sum R (1)}{N} \times 100\%$$

Information:  
 % = Percentage  
 X = Score result obtained  
 $\sum X$  = Overall score

Based on the score results obtained in the form of a percentage, they are then matched with the final table of the review carried out by the media, material, and design validators with the provisions of table 1, as follows.

**Table 1. Review Result Criteria**

Percentage of Assessment	Interpretation
81%-100%	Very Worth It
61%-80%	Worthy
41%-60%	Fairly DecentNot
21%-40%	Worthy
0%-20%	Very Less Worthy

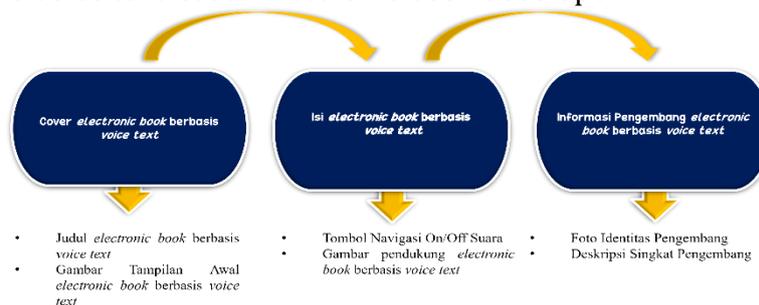
## RESEARCH RESULTS AND DISCUSSION

This research produces a product in the form of an electronic book of Pancasila courses based on voice text. The creation of this digital comic uses the main programs, namely Microsoft Word 365, Flip PDF Professional, and Web Site 2 Apk Bulider. The model used in the development of electronic books based on voice text is ADDIE (Analysis, Design, Development, Implementation, Evaluation) from dick and carry. The development stages are explained in detail as follows. Based on the Analysis of the needs of the Pancasila course, the Accounting Study Program B and the Special Education Study Program B, Universitas PGRI Yogyakarta require new innovations in compulsory curriculum courses because in implementing learning for one semester using an online system. Based on interviews with students of the Accounting Study Program B and the Special Education Study Program B, Universitas PGRI Yogyakarta stated that: "Learning using an online system uses up a lot of internet quota because the use of zoom media for a full semester in the learning process can use up a lot of internet quota. To overcome this, there should be another solution in the learning process so that it continues to run effectively and enjoyably without using up a lot of internet quota" (WWC/BW/October 26, 2023).

Apart from the fact that learning using Zoom uses up a lot of internet quota, learning using an online system is also considered boring because during 2 credits of learning, you only listen to lectures and discussions. This is in line with what was conveyed by the following student: "We students need some fun learning innovations because theoretical Pancasila lectures cause boredom when taking part in learning. This boredom is because learning uses lecture and zoom methods for 2 credits of lectures. Moreover, when the signal is bad, we experience lecture obstacles because we cannot hear the material presented clearly. Therefore, there needs to be innovation in this Pancasila lecture (WWC/NS/October 26, 2023). Based on the results of the needs analysis, to overcome the existing problems, the innovation carried out is self-asynchronous learning by developing electronic books based on voice text for the Pancasila course in the Accounting Study Program B and the Special Education Study Program B. Self-

asynchronous learning is learning that is designed so that students can learn independently but under the supervision of lecturers. This self-asynchronous learning is combined with electronic books that are combined using sound so that the electronic book can be used in two ways, namely reading and listening. Based on the analysis stage, it is then continued to the design stage. The electronic book design stage based on voice text” is based on needs analysis. The next design steps are as follows:

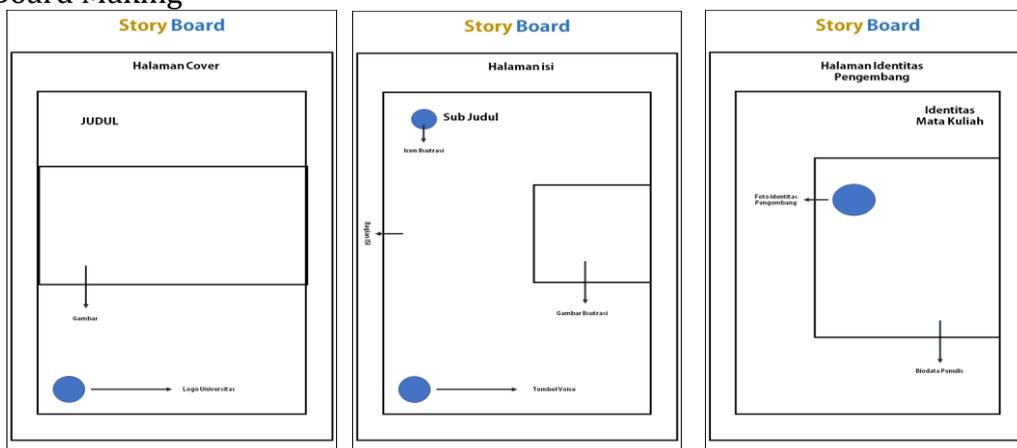
1. Preparation of Teaching Materials. The preparation of Pancasila teaching materials for Higher Education is based on a book from the Ministry of Research, Technology and Higher Education of the Republic of Indonesia which is aligned with the RPS at Universitas PGRI Yogyakarta. The materials included in the voice text-based electronic book are the Urgency of Pancasila in Higher Education, Understanding Pancasila, Pancasila as the Ideology of the Indonesian Nation and State, and Pancasila Political Ethics. This material is prepared based on a needs analysis that can be inserted into voice text-based electronic book media.
2. Flow Chart Making. The creation of a flow chart or flow diagram is to facilitate the design stage of voice text-based electronic books. This voice text-based electronic book media is designed with several parts, the first is the cover, the second is the content, and the last is the identity or information section of the voice text-based electronic book developer. The cover section contains the title of the voice text-based electronic book and the display image of the voice text-based electronic book. The content section consists of navigation buttons for voice and illustrations of the voice text-based electronic book media. The last section, namely the developer identity section, contains a photo of the developer's identity and a brief description of the voice text-based electronic book developer.



**Figure 2. Flow Chart Of Electronic Book Based On Voice Text**

After creating a flow chart, the next stage is to create a story board based on the flow chart.

### 3. Story Board Making

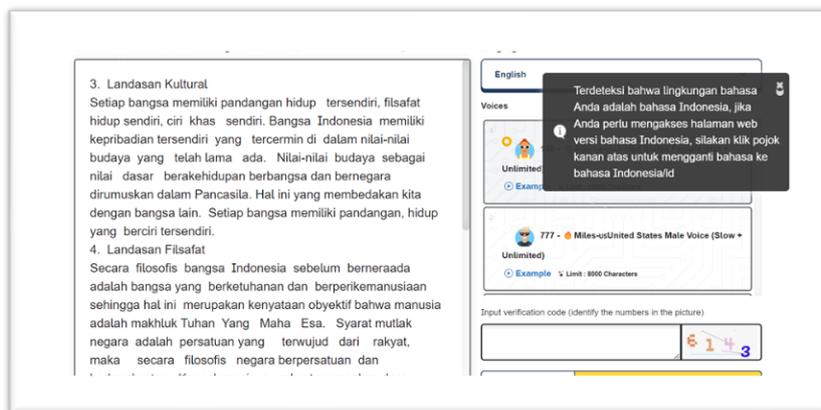


**Figure 3. Story Board Electronic Book Based On Voice Text**

After making a flow chart, the next step is to make a story board to make it easier for researchers to develop electronic books based on voice text. The creation of a story board for an electronic book based on voice text is based on a flow chart. There are three parts of the story board, the first is the cover, the content, and the developer's identity. After making a story board, the next step is the development stage.

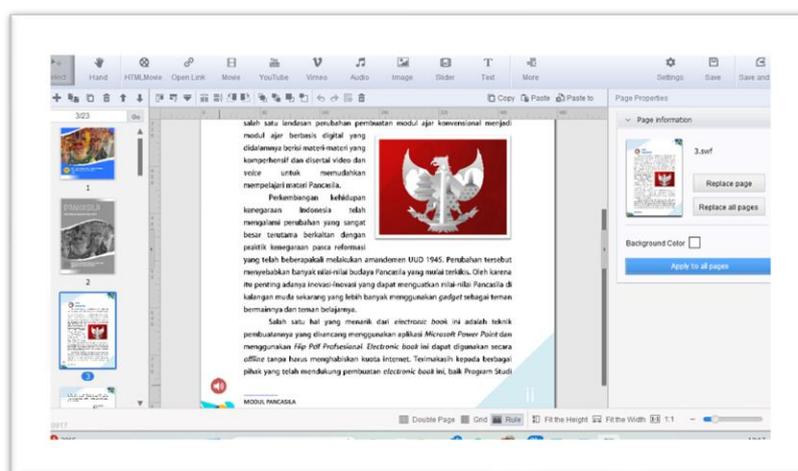
### Discussion

The development stage is carried out by creating an electronic book product based on voice text using Microsoft Word, Flip PDF Professional, Text to Speech, and Website 2 APK Builder. At this development stage, the steps taken are to create electronic book material using Microsoft Word, then design it by inserting several image elements taken from freepik.com, after which the file is converted into a PDF file. After the material is composed, the text of the material is changed into sound by entering the text in the PDF file into the text to speech application.



**Figure 4. Text to Speech**

This step is a novelty in the development of electronic books by changing text into sound so that it can make it easier for users to learn Pancasila material. After changing the text into sound, the next step is to enter the electronic book design based on voice text in the form of a pdf file into the professional flip pdf application. After entering the pdf file of the Pancasila material into the professional flip pdf, the next step is to create a sound icon using images from freepik.com. The sound icon is then edited and edited so that it can display the sound from the sound file that has been created.



**Figure 5. Flip PDF Professional**

After completion, the files and sounds that have been entered into the professional flip pdf application are converted into android application files which are then validated by media experts and material experts. This validation is used to match the material, objectives, and evaluation of the learning media to suit the Pancasila course. At the stage of validating the material used in the development of electronic book media based on voice text, the material expert in validating this learning media is Dr. Septian Aji Permana, M.Pd. as a PPKn lecturer at Universitas PGRI Yogyakarta. Based on the validation results, the following values were obtained:

**Table 2. Expert Validation Results for Electronic Book Media Based on Voice Text**

No	Indicator	Score			
		Mark	Maximum Value	Percent	Category
<b>Aspek Media View</b>					
1	Kemedia design drawing “electronic book learning media based on voice text”	4	85	91.7 %	Very Worth It
2	KThe quality of the display of a combination of symbols/images, writing, and colors presented in electronic book learning media based on voice text.	4			
3	Kconsistency of presentation system in electronic book learning media based on voice text	5			
4	UThe size of the electronic book learning media based on voice text is easy to use	5			
5	Kesedescription of image/symbol layout in electronic book learning media based on voice text	5			
6	Votersn the size of the image/symbol presented in the media. Suitability of the layout of images/symbols in electronic book learning media based on voice text.	4			
7	Votersn basic color Suitability of image/symbol layout in electronic book learning media based on voice text	5			
8	Kesedescription of the proportions between basic colors, symbol colors, and writing colors for voice text-based electronic book learning media	5			
9	Votersn type of writing (letters) in electronic book learning media based on voice text	4			
10	Ketereading of writing (letters) in electronic book learning media based on voice text	5			
11	Tampilan on "electronic book learning media based on voice text" is simple but high quality	4			
12	Mediaa voice text-based electronic book learning Using good, simple, and communicative Indonesian.	5			
13	Mediaa voice text-based electronic book learning Using sentences that are easy to understand and do not give rise to multiple interpretations.	4			
14	KeteThe right way to place material in electronic book learning media based on voice text	5			
15	Mediaa voice text based electronic book learning is easy to use by users	5			
16	MeIn electronic book learning based on voice text, it is easy for users to apply it.	5			
17	MeThis electronic book learning is based on flexible voice text and can be used anywhere	4			

<b>SUser Suggestion</b>					
18	KesesAnalysis of electronic book learning media based on voice text on student activities	4	15	86%	Very Worth It
19	Mediaa voice text based electronic book learning can be used by interacting directly between users	5			
20	Mediaa voice text based electronic book learning is safe for use by students (display and media materials with physical user)	4			

Based on the validation table, the media expert obtained a percentage score of 91.7% for the media display aspect with a very feasible category and from the aspect of user targets, it obtained a percentage score of 86% with a very feasible category. From these results, it can be interpreted that electronic book media based on voice text is very feasible to use in accordance with the Pancasila course. The next stage is validation by material experts. The material expert recommended by the researcher in this study is Yitno Pringgowijoyo, SH, MH as a lecturer in the Pancasila and Citizenship Education study program. Material validation is carried out to obtain results that the material in the voice text-based electronic book media is in accordance with the Pancasila course material. The material validation carried out is seen through three aspects, namely the aspect of material coverage, language quality, and aspect of material presentation. The results of the validation:

**Table 3. Results of Validation by Material Experts**

No	Indicator	Score			
		Mark	Maximum Value	Percent	Category
<b>Aspek Coverage of Material</b>					
1	The relevance of the electronic book learning media material based on voice text presented with Pancasila	5	30	90%	Very Suitable
2	The relevance of the material presented by voice text-based electronic book learning media to Pancasila learning outcomes	5			
3	The relevance of the material presented in the voice text-based electronic book learning media is in accordance with the learning objectives of the Pancasila course.	4			
4	DistrictThe weight of the electronic book learning media material based on voice text to strengthen students' or users' Pancasila knowledge	4			
5	Electronic book learning media material based on voice text memperhabs students behave in accordance with Pancasila values	5			
6	Electronic book learning media material based on voice text makes it easier for users or students to understand Pancasila course material.	4			
<b>Language Quality</b>					
7	Instructional Mediaelectronic bookbased onvoice textmeUse good, simple and communicative Indonesian	5	15	93%	Very Suitable
8	Instructional Mediaelectronic bookbased onvoice textmeUse sentences that are easy to understand and do not give rise to multiple interpretations	4			
9	Ketetext input in electronic book learning media based on voice text to clarify the delivery of material	5			
<b>Aspects of Material Presentation</b>					

10	Systematicin presenting Pancasila material in electronic book learning media based on voice text UNTAKRA (Uno Stacko Democracy)	5	55	92.7 %	Very Suitable
11	Systematicin presenting the discussion on electronic book learning media based on voice text	4			
12	Kconsistency of presentation system in electronic book learning media based on voice text	4			
13	PePresentation of electronic book learning media material based on voice text	5			
14	Material onelectronic book learning media based on voice text does not violate the rules of freedom and ethics	4			
15	Material on meIn electronic book learning based on voice text, it is easy for users or students to understand	5			
16	Material on meIn electronic book learning based on voice text, students or users can improve their understanding of Pancasila.	4			
17	Material on meIn electronic book learning based on voice text, it can foster a sense of nationalism, patriotism, and increase insight.	5			
18	Material on meIn electronic book learning based on voice text, it can strengthen civic knowledge.	5			
19	Material on meIn electronic book learning based on voice text, it can strengthen civic skills.	5			
20	The material in Android-based digital comic media can strengthen civic disposition	5			

Based on the table of validation of electronic book media based on voice text in the Pancasila course, the percentage result is 90% in the aspect of material coverage with a very appropriate category, and in the aspect of language quality, the percentage is 93% with a very appropriate category, and the last is the aspect of material presentation, the percentage is 92.7% with a very appropriate category. Both aspects in the validation of electronic book media based on voice text get an average percentage of 90.6% with a very feasible and very appropriate category for use.



**Figure 6. Voice Text-based Electronic Book Application**

Limited trials were conducted on the Special Education Study Program B and Accounting Study Program B involving 8 students. Based on the trial, a percentage score of 89% was obtained. Voice text-based electronic book media is also equipped with voice, to make it easier

for students to learn Pancasila material so that it can increase student motivation in teaching and learning activities. The sound can be activated or deactivated. Based on validation by media experts and experts in voice text-based electronic book materials, there are things that need to be fixed. Things that need to be fixed include: (1) typo in the identity of the author of the voice text-based electronic book media: (2) the sound button is replaced using an icon from freepik.com so that it is easier to use; and (3) illustrations of the material that are adjusted to the theme of the Pancasila material. Implementation. At the Implementation stage, voice text-based electronic book media that has been validated by material experts, media experts, and tested on a small scale, then the voice text-based electronic book media is ready to be implemented. The trial of voice text-based electronic book media in the Pancasila course aims to determine student responses when the developed media is applied to the Pancasila learning process. The subjects of the large-scale trial were 29 students of the Pancasila and Citizenship Education Study Program in the first semester. The questionnaire used by the researcher in the stage to find out the students' responses was done online. The student response questionnaire contained twenty statements that had to be filled in by the students. The student questionnaire that was filled in was used to determine the practicality of the electronic book learning media based on voice text in the Pancasila course. The values obtained from the student response questionnaire were then analyzed into a percentage score to determine whether the learning media developed by the researcher was successful or not to be applied to Pancasila learning.

**Table 4. User Questionnaire Results**

Aspect	Mark	Maximum value	Percent	Category
<b>Learning Aspects</b>				
1. Suitability of the material with the Pancasila Learning book	78	1200	88%	<b>Very Suitable</b>
2. Suitability of material with Pancasila content in Higher Education	78			
3. Students can interact with electronic book media based on voice text	91			
4. Can increase learning motivation	95			
5. Ease of learning	84			
6. Distributed duplication convenience	92			
7. Media packaging	75			
8. Selection of fonts, images and animations	100			
9. Readability level of the material	90			
10. Color composition and layout	88			
11. Ease of use of media	90			
12. Design appeal	89			
Amount :				<b>Very Suitable</b>

Based on the results of the user response questionnaire, data was obtained that the learning aspect received a percentage of 88% with the Very Appropriate category. Based on the student questionnaire with the Very Appropriate category, which means that the electronic book media based on voice text developed by researchers is effective for use in the Pancasila learning process. Evaluation. Evaluation is conducted to determine the results of the development of learning media that have been developed and tested by research subjects. The development of electronic book media based on voice text took the research subjects of PLB B Study Program Students, Accounting B Study Program and Pancasila and Citizenship Education Program. The results of the development of electronic book media based on voice text obtained good results from students. On average, students think that electronic book media based on voice text has an attractive design, the right color composition and electronic books based on

voice text can be used like ordinary books and electronic books based on voice text have voices that can make it easier to learn Pancasila material. Based on the statement, the electronic book learning media based on voice text is very effective when applied in the learning process where the subjects are active, so that the lecture atmosphere is more enjoyable. The learning media developed can improve the understanding of the material presented to students.

## **CONCLUSION**

Based on the development of electronic book media based on voice text has been done with various stages, namely the analysis, design, development, implementation, and evaluation stages. The development of electronic book media based on voice text is focused on students' understanding of Pancasila material. Based on validation from media experts, material experts, and from the results of questionnaires conducted on students, it can be analyzed that the electronic book learning media based on voice text is suitable for use in tertiary level learning, especially in Pancasila learning. Implementation of electronic book media based on voice text in the Pancasila and Citizenship Education Study Program, PLB B Study Program and Accounting B Study Program Semester I. Based on the validation of media experts, electronic book based on voice text got an average percentage score of 89% with a very feasible category and the average validation of electronic book material based on voice text got a score of 92% with a very appropriate category and in terms of user practicality got a score of 88% with a very appropriate category.

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