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The practicality of islamic integrated ethnobotany textbooks based on the 3D pageflip application

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Abstract. The purpose of this research is to produce an Islamic Integrated Ethnobotany textbook based on the 3D PageFlip application with practical criteria. This research is part of development research with the ADDIE design. This research is in the implementation stage. The research data were obtained from the field test stage conducted online on Biology Education students at IAIN Palangka Raya in the even semester 2019/2020. Data collection related to the practicality of textbooks used a response questionnaire instrument given to one lecturer and 29 students as well as a questionnaire for the implementation of learning by two observers. Data were analyzed using descriptive statistical analysis techniques. The results of the analysis of the lecturer response questionnaire obtained a percentage of 90.9% (very practical). The results of the student response questionnaire analysis obtained a percentage of 84.8% (very practical). The results of the analysis of the learning implementation questionnaire by the observer obtained a percentage of 91.8% (very good). Therefore, it can be concluded that the Islamic Integrated Ethnobotany textbook based on the 3D PageFlip application is practical to use in the Ethnobotany learning process.

1. Introduction

Ethnobotany is an essential and useful study to be discussed and taught to students. In terms of understanding, ethnobotany is the study of the relationship between humans and the surrounding plants [1]. Ethnobotany contains studies on the use of plants in the daily life of indigenous people, which consists of various ethnic groups with their respective ethnic uniqueness [2]. Besides, it is also known that several ethnic groups have used plants for generations in a religious tradition or ritual. The existence of studies related to Ethnobotany is expected to increase scientific knowledge and support the preservation of nature by utilizing local wisdom that exists in the community. In this modern era, it is necessary to preserve and document the plants used by the community. Therefore, these plants will not go extinct and their benefits are better known by the wider community as medicine, clothing, food, and shelter. As a result, Ethnobotany study becomes one of the essential discussions in the world of education.

Given that science continues to develop rapidly, development in the world of education should be balanced among intellectual, emotional, and spiritual intelligences. Spirituality that is presented in education will give significant meaning to the life of a nation based on religious values. Learning that is integrated with religious values will provide students with values about divinity in accordance with the



concept of science [3]. The hope is that students will have strong faith and piety because the scientific concepts they learn are scientifically proven and implicit in the religious teachings they believe in. Thus, the need for integration of Islam in textbooks aims to build student character into individuals who are not only cognitively intelligent but also spiritually and emotionally intelligent. The education system of a nation is secularized as a result of the influences of modern culture from the west; this has led to the gradual erosion of the Islamic identity of Muslim scholars. Therefore, efforts to integrate science with Islamic values are needed so that Muslim students are proud of their Muslim identity and apply Islamic law in their daily lives.

The State Islamic Institute (IAIN) Palangka Raya is a religion-based campus under the auspices of the Indonesian Ministry of Religion through the Director-General of Islamic Education. It is hoped that it can make Al-Qur'an and Hadith as references. However, so far, the application has not been comprehensive in the Biology Tadris study program [4]. Even though science, especially biology, is related to the creation of Allah SWT. Namely, the universe, humans, animals, and plants are often mentioned in the Al-Qur'an. Al-Qur'an is the source of all knowledge, including knowledge, so that all general knowledge courses at PTKI should be integrated with Islamic values so that the resulting graduates have Qur'an spirit. Therefore, the integration of Islamic values in the learning process in Ethnobotany courses related to plants and their benefits is essential. Especially in Ethnobotany, there are studies related to the use of plants in the religious traditions and rituals of society. So there needs to be an additional explanation from an Islamic perspective to be able to look wisely on this tradition. This can be supported by the existence of an integrated Ethnobotany textbook.

Based on the results of the observation at IAIN Palangka Raya in the odd semester of 2018, information was obtained that there were not any Ethnobotany books in the IAIN Palangka Raya library. Ethnobotany teaching materials used during lectures come from other campuses. The existing teaching materials are e-books, not Islamic integrated, in terms of language, it is quite challenging to understand, and the appearance of the book is less attractive. When viewed from the Semester Lecture Plan made by the Ethnobotany subject lecturer, there is a list related to Islamic values. However, in the learning process, the integration of material with Islamic values has not been done optimally; this is because the teaching materials used during lectures are not integrated to Islam. Then, when viewed from a technological perspective, each class at IAIN Palangka Raya is equipped with LCD and WiFi, plus lecturers and students all have personal cell phones and laptops, so it is possible to use electronic teaching materials.

Based on the results of interviews with lecturers of Ethnobotany subjects, it was obtained information that the lecturers in question needed teaching materials in the form of textbooks, textbooks were chosen because they could contain complete material and if the quality products could be published. The lecturer wants an Ethnobotany textbook that contains Ethnobotany studies of a plant. The lecturer concerned also wants Ethnobotany textbooks that are by the RPS, practical and exciting. Other researchers have reviewed research related to the development of Ethnobotany textbooks based on plants used by specific communities, the results of which indicate that there is still a lack of textbooks in Ethnobotany lectures [5]. So, it is necessary to develop Ethnobotany textbooks to help Ethnobotany lectures.

Based on the questionnaire of students' needs analysis to be distributed to 20 respondents in the Biology Tadris study program at IAIN Palangka Raya who had taken Ethnobotany courses, it was obtained data that students needed an integrated Islamic Ethnobotany textbook. Students admit that their lecturers have not used teaching materials specifically designed for learning Ethnobotany courses on their campus. Students admitted that they have difficulty understanding the material through existing teaching materials. Students want textbooks that are more practical and interesting so that innovation is needed in the Ethnobotany textbook, namely integrated Islamic and 3D PageFlip based applications in order to take advantage of existing technology.

Technology in education must be utilized appropriately in order to improve the quality of learning experienced by students [6]. Technological developments can be used in learning, especially in teaching materials [7]. The use of technology in teaching materials is the existence of electronic books (e-books), where electronic books can be presented more attractively by using the 3D PageFlip application. 3D

PageFlip is a software that can be used to create digital e-book teaching materials with 3D effects [8]. This software is capable of converting teaching materials in the form of words, powerpoints and pdf into 3D flash e-books with various formats such as Exe, Zip, Html, 3DP, Screen Saver and others. Thus, the innovation of textbooks in the form of flipbooks is more practical and attractive with technology that supports today's learning.

The existence of textbooks is essential in supporting the learning process. Textbooks play an essential role in the learning process, and textbooks are an essential factor so that learning at the tertiary level can run effectively and with quality [9]. Also, textbooks are one type of teaching material that can be used as a guide for lecturers and students in carrying out lecture activities. Meanwhile, textbooks have a different character from reference books in general. The preparation of textbooks is adjusted to the curriculum, refers to the competencies that must be achieved, written and designed based on the needs of students, the language used is communicative, prepared for the instructional process, and has a feedback mechanism from students [10].

Textbooks can be used as monitoring instruments in the education system because they have a role in implementing the curriculum [11]. Nowadays, science and society are developing very fast, and new information must be provided to students, so textbooks must be kept updated all the time [12]. Some of the opinions above underlie the need for the development of textbooks, given the rapidly growing science and curriculum changes. Thus, textbooks are part of the teaching material that is very much needed to support the learning process, including in the Ethnobotany subject.

This research is part of the research and development carried out by the researcher after the product is declared valid, then the researcher continues the research to determine the practicality of the product. Practicality is one of the criteria for determining the quality of the development of a product, in addition to two other criteria, namely validity and effectiveness [13]. The second characteristic of high-quality teaching materials is that both teachers and students find the teaching materials practical to use [14]. Practicality is a word related to the level of ease of use of an object. If associated with textbooks, practical means that lecturers and students are happy and feel it ease to use textbooks in learning. In order for learning to run well, practical teaching materials are needed. The purpose of this study is to produce integrated Islamic Ethnobotany textbooks based on the 3D PageFlip application with practical criteria.

2. Method

This research is part of development research with the ADDIE design. Previously, the analysis, design and development stages had been carried out until the product was declared valid. So, the research can be continued at the implementation stage to test the practicality and effectiveness of the product. The research data was obtained from an online field-scale test on Biology Tadris students of IAIN Palangka Raya in the even semester 2019/2020. Data collection related to the practicality of textbooks used a response questionnaire instrument given to a lecturer and 29 students, as well as a questionnaire on the implementation of learning by two observers. Data were analyzed using descriptive statistical analysis techniques. The product testing is carried out in two stages, namely small-scale trials and field-scale trials. The small-scale trial was carried out in a limited group, namely eight fourth-semester students. After obtaining the results and input from the small-scale trial data, the teaching material was revised according to user recommendations. Then, the revised textbook was tested on a field scale of 29 students in the sixth semester. The field test was carried out to obtain data on the practicality of the textbooks being developed.

Measuring the practicality of this textbook uses a response questionnaire given to lecturers, students and observers. The product practicality criteria use a Likert scale [15], which is to provide a score for each item with answers strongly agree (4), agree (3), disagree (2), and disagree (1). Analysis of the practicality of this textbook is to find the percentage of the comparison between the total score given by the respondent (ΣR) and the maximum score that has been determined (N) [16]. The criteria for practicality used in the development of textbooks are shown in Table 1.

Table 1. Practicality criteria

No.	Percentage	Criteria
1	$81\% \leq P \leq 100\%$	Very practical
2	$61\% \leq P < 81\%$	Practical
3	$41\% \leq P < 61\%$	Pretty practical
4	$21\% \leq P < 41\%$	Less practical
5	$< 21\%$	Very impractical

Measurement of the implementation of learning was carried out using a questionnaire given to the observers. The applied criteria use a Likert Scale [15], which is to provide a score for each item with the answer being carried out very well (4), performing well (3), performing poorly (2), and not performing well (1). The analysis of this textbook's applied questionnaire is by looking for the percentage of the comparison between the total score given by the observer (ΣR) and the predetermined maximum score (N). The implementation criteria used in the development of textbooks are shown in Table 2.

Table 2. Implementation criteria

No.	Percentage	Criteria
1	$81\% \leq P \leq 100\%$	Very good
2	$61\% \leq P < 81\%$	Well
3	$41\% \leq P < 61\%$	Pretty good
4	$21\% \leq P < 41\%$	Not good
5	$< 21\%$	Not very good

3. Results and Discussion

3.1. Textbook Practicality Based on Lecturer's Responses

After implementing learning using textbooks, the lecturer's who teach are given a response questionnaire. The questionnaire is used to determine the practicality of textbooks. Lecturer's response data were tested on a small scale and field scale can be seen in Table 3.

Table 3. Lecturer's responses in small scale trials and on a field scale

No.	Indicator	Small Scale	Field Scale
1	Ease of understanding the content of textbooks	7	8
2	The convenience obtained from the aspect of the textbook presentation	7	8
3	The convenience is obtained from the linguistic aspect of the textbook	6	7
4	Ease obtained from the aspect of textbook graphics	9	9
5	Ease of understanding Islamic integration in textbooks	8	8
Total score		37	40
Maximum Score		44	44
Percentage		84,1%	90,9%
Criteria		Very Practical	Very Practical

The results of the lecturer's response were tested on a small scale, obtaining an average percentage of 84.1% with very practical criteria. However, revisions need to be made according to the recommendations of the lecturer. The lecturer suggested changing the order between Chapter 6 and Chapter 7 so that the order of the chapters was in accordance with the learning plan, and the grammar that was still not suitable was corrected. Meanwhile, the results of the field scale lecturer's responses obtained an average percentage of 90.9% with very practical criteria. The lecturer in question stated that practical products were used during learning. However, the lecturer commented that sometimes they find it difficult when they want to go to the desired book page because there is no table of content in the application.

3.2. Textbook Practicality Based on Student Response

After carrying out learning using textbooks, students were given a response questionnaire. The questionnaire is used to determine the practicality of textbooks. Student response data were tested on a small scale and field scale can be seen in Table 4.

Table 4. Students' responses in small scale trials and on a field scale

No.	Indicator	Small Scale	Field Scale
1	Ease of understanding the content of textbooks	7	6,9
2	The convenience obtained from the aspect of the textbook presentation	6,1	6,9
3	The convenience is obtained from the linguistic aspect of the textbook	6,3	6,4
4	Ease obtained from the aspect of textbook graphics	9,5	10,1
5	Ease of understanding Islamic integration in textbooks	7,5	7
Total score		36,4	37,3
Maximum Score		44	44
Percentage		82,7%	84,7%
Criteria		Very Practical	Very Practical

The results of student responses were tested on a small scale, obtaining an average percentage of 82.7% with very practical criteria. However, revisions need to be made according to recommendations from students. Students provide input so that the material in the book is added again, in the integration section it is added asbabun nuzul ayat, grammar that is still not suitable for improvement, and if possible textbooks can be opened via Android. Meanwhile, the results of student responses tested on a field scale obtained an average percentage of 84.7% with very practical criteria. However, there are several recommendations from students as product users, namely that some grammar should be improved and simplified. The content of the material should be added again, the contents of the glossary should be added, the images should be reproduced, and if possible, textbooks can be opened via Android.

3.3. Learning Implementation by Observer

Two observers observed the implementation of learning. Observations were carried out from the beginning to the end of the lesson at four meetings. Learning applied data can be seen in Table 5 and Table 6.

Table 5. Data on learning implementation in small scale trials

Observer	Meeting to	Total score	Average Score	Percentage	Criteria
I	1	81	85,25	92,7%	Very good
	2	85			
	3	86			
	4	89			
II	1	83	83,75	91%	Very good
	2	84			
	3	84			
	4	84			
Implementation				91,85%	Very good

The analysis results of the implementation of learning were tested on a small scale, obtaining an average score of 91.85% with very good criteria. However, there are some recommendations from the observer for further trials on a field scale, namely that students should be reminded to be on standby at the beginning of the lesson to start more quickly. The lecturer should then emphasize more and require

students to discuss or carry out questions and answers between students. Besides that, the lecturer should be more in giving perceptions and motivation to be more interested and eager to participate in learning.

Table 6. Data on learning implementation in field scale

Observer	Meeting to	Total score	Average Score	Percentage	Criteria
I	1	89	89	92,7%	Very good
	2	90			
	3	90			
	4	87			
II	1	80	87,25	90,9%	Very good
	2	89			
	3	89			
	4	91			
Implementation				91,8%	Very good

The analysis results of the implementation of learning were tested on a field scale, obtaining an average score of 91.8% with very good criteria. The assessment between observer one and observer 2 was not much different. This means that the learning process is by the plan.

Based on the research results, this textbook has been declared practical in terms of lecturer responses, student responses and learning implementation by observers. This is in line with Angelia and Fauzi's research which also reviewed the practicality of textbooks based on teacher and student responses [17]. Then it is also in line with Fatmawati's research, that the assessment of the practicality of teaching materials is measured not only based on student responses to field tests but also based on the results of learning implementation [18]. Learning implementation using teaching materials is carried out well or high if students are actively involved and interact with friends and educators to solve problems or questions related to learning material [19].

Based on lecturer's responses, students' responses, and the application of learning by observers, data on the strengths and weaknesses of integrated Islamic Ethnobotany textbooks based on the 3D PageFlip application were also obtained. The advantages of this textbook are integrated Islam, in terms of attractive appearance, easy operation, increase student reading interest, and support the Ethnobotany learning process which is carried out online because it is in the form of an e-book. Practicality refers to the use of advanced teaching materials that can be easily operated by educators and students so that learning is meaningful, interesting, fun, and useful for the lives of students [20]. Textbooks are said to be practical if they are implemented in learning and are easy to use [21]. While the weakness of this textbook is that the file size is quite large, so it takes a few minutes to download. When testing the product, it turned out that the flipbook file failed to open via Android, so it could only be opened using a laptop. Then, some laptops cannot open files because the operating system does not support them. Also, the flipbook file is not equipped with a table of the context menu, so there are users who have difficulty getting to the desired chapter page, and in terms of the font size the writing looks small so when reading it needs to be zoomed first.

4. Conclusion

The integrated Ethnobotany textbook based on the 3D PageFlip application is stated to be practical when used in the online learning process of the Ethnobotany subject at IAIN Palangka Raya. This is evidenced by the results of the analysis of the lecturer's response questionnaire obtained by a percentage of 90.9% (very practical). In addition, the results of the student response questionnaire analysis obtained a percentage of 84.8% (very practical). At the same time, the results of the analysis of the learning implementation questionnaire by the observer obtained a percentage of 91.8% (very good). So, this textbook can be used as alternative teaching material to make Ethnobotany learning more qualified. The integrated Islamic Ethnobotany textbook based on the 3D PageFlip application still has many shortcomings and limitations, namely in terms of the material, the discussion is still insufficient, the

application features are still incomplete, the book file size is quite large and can only be opened via a laptop. Therefore, there are opportunities for research and redevelopment with the renewal and addition of material, as well as using other better media innovations.

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