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The effectiveness of oshibana book development for class VII students of MTs Darissulaimaniyyah plant classification materials

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ARTICLE INFO	ABSTRACT
   Keywords: Effectiveness, oshibana book, plant classification materials	This study aims to determine the effectiveness of the Oshibana book in science learning for seventh grade students of MTs Darissulaimaniyyah Plant Classification material. The research method used in this study is Research and Development (RnD) using the ADDIE model, which consists of five stages: Analyze, Design, Development, Implementaion and Evaluation. The effectiveness of the Oshibana book was measured through a feasibility test, a readability questionnaire and a trial to students using pre-test and post-test questions. The feasibility test for the Oshibana book was carried out by three validators, namely material expert validators, media expert validators and seventh grade science teachers at MTs Darissulaimaniyyah. The product trial design for students uses Quasy Experiment using amodel non equivalent control group design. The sample used was class VII B as the control class and class VII C as the experimental class, the sample was determined by purposive sampling technique. Oshibana book development process which includes special needs analysis, curriculum analysis and preparation of Oshibana book design. The results of the special needs analysis showed that 53.06% of the seventh grade students of MTs Darissulaimaniyyah did not have special learning media to study Plant Classification material so that researchers tried to develop the Oshibana book, as many as 81.63% of students agreed that the Oshibana book was developed as a learning medium. The results of the curriculum analysis of Plant Classification materials are studied in KD 3.2 about classifying living things and objects based on observed characteristics, and KD 4.2 about presenting results on classifying living things and objects around based on observed characteristics. The process of compiling the Oshibana book consists of several components, namely: cover front, introduction, table of contents, list of pictures, learning outcomes, book contents (Plant Classification materials and Oshibana materials), assignments, how to use and care for Oshibana learning media, reference lists and cover back. The results of the Oshibana book feasibility test by material experts obtained results of 72% with the criteria of being effective as a learning medium, the results of the assessment of media experts obtaining results of 81.67 with the criteria of being effective as a learning medium and the results of the assessment of the seventh grade science teacher obtaining results of 92% with the criteria very effective as a learning medium. The results of the readability test by students of MTs Darissulaimaniyyah obtained an average of 88.01% with the criteria of being very effective as a learning medium. While the results of the trial to the experimental class and control class students obtained a comparison of the average N-gain value of 0.6667 0.0185 which indicates that

the average N-gain value in the experimental class using the Oshibana book is higher than the control class. who didn't use Oshibana's book. The test of the effectiveness of the Oshibana book was carried out using the Independent Sample Test, the results obtained were 0.00 0.05 indicating a significant difference. The results show that Oshibana's book is effective as a learning medium for studying Plant Classification materials.

INTRODUCTION

Learning media are all kinds of communication tools used to convey information from teachers to students to create a conducive learning environment so that students can carry out the learning process efficiently and effectively (Hamzah, 2011: 112). The use of learning media plays an important role in the learning process, apart from being a distributor of learning materials from teachers to students, this learning media also plays a role in helping students understand learning materials when participating in teaching and learning activities in class. The process of preparing learning media is carried out through a development process, the goal is that the resulting learning media is effective for use in teaching and learning in the classroom so that it can achieve learning objectives.

One of the learning media that will be developed is Oshibana. Oshibana is the creativity of arranging dried flower arrangements and leaves into a beautiful object using the press technique. Oshibana is the art of flower arrangement originating from Japan, the purpose of which is as a decoration to enjoy the beauty of flowers (Lutfiyah, 2018: 346). Oshibana so that it can be used as a learning medium is compiled into a book, with the aim that it can be used as a practical and easy-to-use learning medium. The developed Oshibana book contains material components and includes Oshibana designs for studying Plant Classification Materials.

Plant Classification Materials are materials that are studied by students starting from SMP/MTs in class VII odd semesters in the 2013 Curriculum which is a component in the Classification of Living Things material. Plant classification is a system of classifying plants in a unit called a taxon (taxonomy level) (Sudarmiyati, 2016: 24). This plant classification includes organisms ranging from mosses to higher plants that are eukaryotic and multicellular. One of the characteristics of plants is that they have chlorophyll which helps convert sunlight into chemical energy through the process of photosynthesis.

The learning process of Plant Classification material at MTs Darissulaimaniyyah is considered a difficult material because learning it requires a memorization process. Students also experience some difficulties, namely determining scientific names of plants, procedures for writing scientific names of plants, grouping plants in taxon order and describing plant characteristics. The need for a learning media also plays an important role in helping students understand and overcome learning difficulties in studying Plant Classification material. Appropriate learning media are expected to be able to assist students in achieving learning objectives. Based on the explanation above, considering the importance of a learning media to help the learning process. Researchers are trying to develop the Oshibana book as a learning medium to study Plant Classification material. This Oshibana book is expected to be an effective learning medium for students of class VII SMP/MTs.

MATERIALS AND METHODS

Method used in this research is Research and Development (RnD). This type of research is oriented towards product development, product production, and testing the effectiveness of the resulting product. The development procedure in this study uses the ADDIE development model which consists of 5 stages, namely: analyze, design, development, implementation and evaluation. This research was conducted from March 6, 2021 to May 2, 2021, which took place at the research location, namely MTs Darissulaimaniyyah.

The population in this study were all students of MTs Darissulaimaniyyah class VII which consisted of three classes, namely class VIIA, class VII B and class VII C. While the sample in this study were students of MTs Darissulaimaniyyah class VII which only consisted of two classes, namely class VII B and VII C. Class VII B will be the subject of the control group, while class VII C will be the subject of the experimental group. This research uses Quasy Experiment withmodel non equivalent control group design. The control class was treated not using the Oshibana book, while the experimental class was treated using the Oshibana book.

The technique sampling used to determine the research sample is purposive sampling which is a technique for determining samples with certain considerations (Sugiyono, 2018: 133). Class VII A is a female student class with 8 students, while class VII B and VII C is a male student class with 20 students in class VII B and 21 students in class VII C. Based on the number of students in each class, this is what the researcher considers to determine the research sample. The number of students in class VII B and VII C is suitable to be used as research subjects.

The learning media for the Oshibana book that was developed was validated by 3 validators, namely material experts, media experts and science subject teachers at MTs Darissulaimaniyyah. In addition, the feasibility test of the biological monopoly media was also carried out on students using a readability questionnaire, pre-test and post-test questions. The scale used in this data collection instrument is the Likert Scale with grades ranging from (1) not good, (2) not good, (3) quite good, (4) good, and (5) very good (Sugiyono, 2018: 147). The instrument used to test the feasibility of the Oshibana book is a validation instrument. The following are the steps to measure the feasibility of Oshibana's book:

1. Measuring the results of the validation assessment data were analyzed descriptively quantitatively, namely calculating the percentage of indicators for each category in the learning media that had been developed using the formula:

$$\frac{Total\ scores\ obtained}{Total\ maximum\ score} \times 100\%$$

2. Converting the calculation results qualitatively by using a rating scale with the following conditions:

Table 1. Qualification Level of Effectiveness

Criteria Validity	Level of Effectiveness
84 % - 100 %	Very effective as a learning medium
68 % - 83 %	Effective as a learning medium
52 % - 67 %	Quite effective as a learning medium
36 % - 51%	Less effective as a learning medium
20 % - 35%	Ineffective as a learning medium

(Arifin Z, 2009: 162)

Meanwhile, to measure student learning outcomes to determine whether there is an increase in student learning outcomes after conducting pre-test-test and posttest is calculated using the N-gain test, with the formula:

$$\text{N-gain} = \frac{Spost - spre}{Smaks - spre}$$

Description:
N-gain = difference in value of the post-test and pre-test
Spost = value of the post-test
Spre = the value of the pre-test
Smaks = maximum value

Category N-gain is as follows:
High : g > 0.7
Medium : 0.3 < g < 0.7
Low : g < 0.3
(Rita Rahmaniati, 2015: 196)

RESULTS AND DISCUSSION
A. Description of Oshibana Book Development

Description of Oshibana book development consists of needs analysis stage specifically, curriculum analysis and preparation of Oshibana book design. Special needs analysis was carried out by distributing questionnaires to all students of class VII MTs Darissulaimaniyyah. Special needs analysis is a process to obtain more detailed information based on needs (Chaeruman, 2008: 10). The results of the special needs analysis showed that 53.06% of the seventh grade students of MTs Darissulaimaniyyah did not have special learning media to study Plant Classification material so that researchers tried to develop the Oshibana book, as many as 81.63% of students agreed that the Oshibana book was developed as a learning medium.

Curriculum analysis is a process carried out to determine learning objectives and competencies that must be possessed by students (Cahyadi, 2019: 36). Curriculum analysis is carried out by adjusting the applicable curriculum in schools, the goal is that the learning media development process can be in accordance with the curriculum and the objectives in the learning process can be achieved by students. The results of the curriculum analysis show that the curriculum used in schools is the 2013 curriculum. Curriculum analysis refers to KD 3.2 about classifying living things and objects based on observed characteristics, and KD 4.2 about presenting results about classifying living things and objects around based on observed characteristics. The KD refers to the Plant Classification material studied by students of SMP/MTs class VII in science subjects.

The process of compiling the Oshibana book is arranged on B5 size paper which will later be bound using a ring binder, the goal is that in practice the Oshibana design learning can be removed from the book and distributed to students. The method of compiling the contents of the book is adjusted to the format of the preparation of the book. The margins or borders set the position of writing the top, right and bottom 2 cm while the left is 2.5 cm. The type of font used is Arial (for the cover frontand cover) back and Times New Roman (matter). The chapters are written

in font size 14, sub-chapters 12, content material 11, while footnotes and image descriptions are in font size 10 with a spacing of 1.15 (LKPP UNHAS, 2015: 1).

Oshibana which is the art of arranging flowers by drying certain plant parts, especially flower parts without using any chemicals which are then assembled into interesting and beautiful works (Wirakusuma, 2018: 694). The plants used to compose the Oshibana designs include mosses, ferns and seed plants to include the Plant Classification material component. The criteria for the plants used are dry plants that contain a small amount of water so that they are easy to dry. The plant parts used as Oshibana are the leaves, flowers and small twigs, because not all parts of the plant body can be dried. How to dry Oshibana using the book press technique, namely by inserting flowers between two sheets of paper and then placing them in airtight plastic and then overwriting them with heavy books. The flower press stack can be adjusted to the size of the airtight plastic. Wait for about a week before opening the book to check the pressed flowers (Rina, 2004: 18).

The Oshibana book that will be developed by the researcher has several components, namely: cover front, introduction, table of contents, list of pictures, book contents, assignments, how to use and care for Oshibana learning media, reference list, Oshibana design and cover back. The contents of the Oshibana book contain learning outcomes and materials, which consist of Plant Classification and Oshibana material. Oshibana's design section includes components in the Plant Classification material, namely mosses, ferns and seed plants. The plant parts used to make up Oshibana's designs are leaves, flowers and stems. The Oshibana design will later be pressed so that the plants in the Oshibana design are not easily damaged and last longer. An example of an Oshibana design can be seen in figure 1.
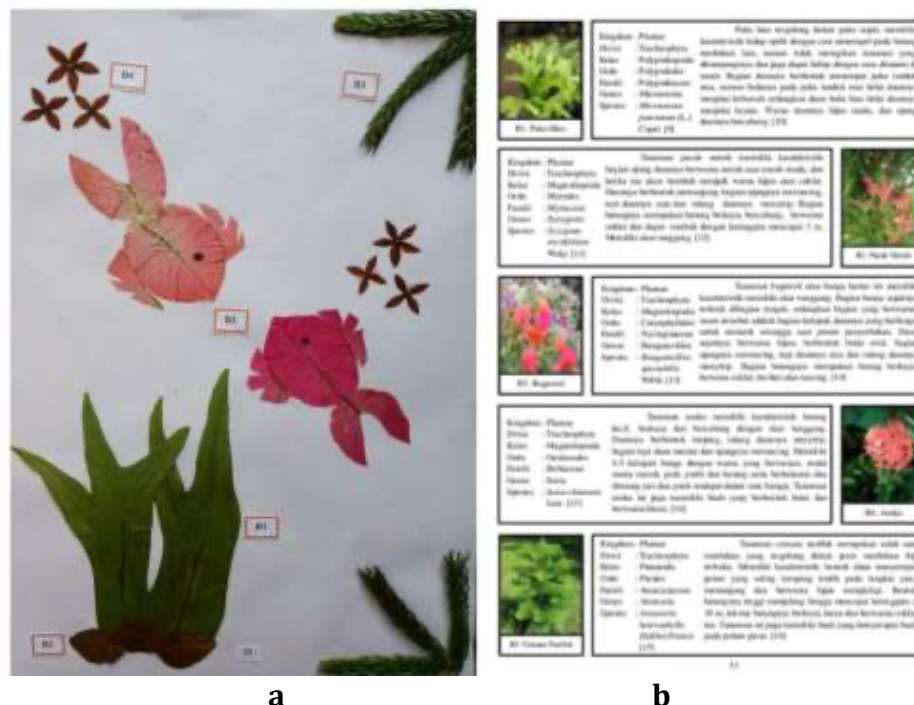
a   b

Figure 1: An example of an Oshibana design
a. Oshibana Design, b. Description of Classification and Characteristics of Plants that Compose Oshibana Design

B. Results of Feasibility Test of Oshibana Book

Table 2 Feasibility Test Results of Oshibana Book

No.	Validator	Percentage (%)	Results
1.	Material Expert	72%	Effective as a learning medium
2.	Media Expert	81.67 %	Effective as a learning medium
3.	Science teacher class VII	92%	Very effective as a learning medium

The results of the feasibility test by the material expert validator obtain results 72% with effective criteria as a learning medium. The feasibility of the material aspect is declared valid if the material components in the learning media developed are in accordance with Core Competencies, Basic Competencies, indicators of competency achievement and learning objectives (Asyhar, 2011: 82). The material in the learning media should be presented in a language that is easily understood by students so that it is easy to remember and memorize so that it can increase students' understanding of the material being studied. The scope of material in learning media must have the aim of motivating students to be able to stimulate, remember what needs to be learned, provide feedback, feedback and encourage students to practice correctly (Windayati, 2016: 3). The material is designed with instructional objectives so that teaching and learning interactions can be established between teachers and students in the classroom during learning activities. It is hoped that the material presented in the developed learning media can improve students' understanding of the material being studied and learning outcomes (Ratnasari, 2017: 58).

The results of the feasibility test by the media expert validator obtained the results of 81.67% with the criteria of being effective as a learning medium. Good learning media are practical, flexible, and durable. In addition, learning media must also be used whenever and wherever and easy to carry everywhere (Asyhar, 2011: 82). The design of learning media to be interesting is equipped with images that support the content of the material and the selection of appropriate colors. Learning media to be an attraction for students must be presented in a unique way so as not to create a monotonous learning process. The design of the learning media in this study is to combine the Oshibana design which consists of a collection of various types of dry plants with Plant Classification material which is arranged into a book with the aim of being a learning medium that is easy to carry, move and not dangerous for students (Afifah, 2014: 497). Learning media are arranged in the form of native plants from nature which are deliberately made to support learning in the classroom without having to visit the place where the plants were obtained. The dried plants can provide an overall picture of the characteristics of the original plant (Windayati, 2016: 3).

The results of the feasibility test by the seventh grade science teacher obtained 92% results with the criteria of being very effective as a learning medium. The use of learning media has the aim of generating motivation to students, stimulating students in providing responses or feedback and carrying out the practice correctly (Susilo, 2015: 14). Learning media facilitates teachers and students so that they can be used easily and practically. In addition, appropriate learning media can focus students on learning material when students' attention is distracted during learning activities in class. The Oshibana book developed by the researcher presents an interesting way to

study Plant Classification material, hopefully the teacher can show various characteristics of plants easily. Learning media to be able to support communication between teachers and students must include educative components, namely: learning media as the center of attention of students, the existence of learning objectives, the existence of student activities, the teacher provides motivation and the learning components cannot be separated.

C. Product Readability

Questionnaire The product readability questionnaire was given to all seventh grade students at MTs Darissulaimaniyyah and obtained an average result of 88.01% with the criteria of being very effective as a learning medium. Learning media to be of interest to students must be designed as attractive as possible with attractive color combinations, and packaging material also uses clear language and is easily understood by students according to their level of education. Original media can display real objects so that they can provide direct experience to students in the learning process in class. Original media has a unique use as a learning medium, because it is able to bridge the learning process by observing the original plant even though the shape has been modified (Fitriyana, 2016: 68). Unique learning media facilitate students to make learning more interesting, fun and easy. Students give a positive response to the learning media that will be developed. The uniqueness of the developed learning media creates an attraction for students. The use of learning media is expected to influence student learning activities which will later be seen during the learning process in the classroom. (Ranti, 2019: 46)

D. Test Results to Students
Table 3 Test Results to Students

Component	Value of N-gain	
	Experiment	Control
Number of Samples	21	20
Average	0.0185	0.6667
Highest Value	1	0.44
Lowest Value	0	-0.67
Normality Test (One Sample Kolmogorov-Smirnov)		
Sig	0.802 0.05	
Conclusion	Normal	
Homogeneity Test (Levene Statistic)		
Sig	0.324 0.05	
Conclusion	Homogeneous	
T-test (Independent Sample Test)		
Sig	0.00 0, 05	
Conclusion	Significantly different	

Based on the table data above, it can be seen that the average N-gain value of students in the experimental class is 0.6667, which is higher than that of students in the control class, which is 0.0185. The results of the normality test using the Kolmogorov- Smirnov One Sample using SPSS version 21 showed that the data was normally distributed because the significance result was more than 0.05. Furthermore, the homogeneity test using Levene Statistics shows that the data is

homogeneous because the results of the significance are more than 0.05. The data were normally distributed and homogeneous, the next test was carried out using antest independent t (Independent Sample Test) with a significance result of 0.00 0.05. The results showed that the learning outcomes of the experimental class and the control class were significantly different. This is because through learning in the experimental class using the Oshibana book, students can see the real morphology of plants so that they can relate the concepts received during the learning process. As it is widely known that students will be more confident in understanding the material if students can play a direct role in the learning environment so that they do not only listen or see but also actively participate in the learning process. (Afifah, 2014: 500)

According to Munadi (2013: 111), that original media objects are also called real media, which have unique uses as learning media, although sometimes the form is not modified or modified because it can convey the material being studied. Original media displaying real objects in the classroom can provide direct experience to students when learning. Through the original media can bridge the differences in classroom learning situations with real life situations. The use of appropriate learning media will support the achievement of learning objectives (Arrijani, 2005: 140).

The increase in student learning outcomes after working on the pre-test and post-test questions showed that in studying the Plant Classification material, the students' abilities increased. Through pre-test and post-test questions that have been arranged according to the grid to determine the achievement of learning objectives, students can find out the order of taxon, characteristics of mosses and ferns, differences between dicots and monocots, differences between angiosperms and gymnosperms, scientific names of plants and Procedure for writing scientific names of plants correctly. The achievement of learning objectives also shows that the Oshibana book developed by researchers is effective as a learning medium for studying Plant Classification material, because apart from being able to improve student learning outcomes, it is also able to overcome students' learning difficulties in studying Plant Classification material.

CONCLUSIONS

Based on the results of research that has been developed, the following results are obtained:

1. The results of the special needs analysis show that 53.06% of class VII students of MTs Darissulaimaniyyah do not have special learning media to study Plant Classification material so that researchers seek to develop Oshibana books, as many as 81, 63% of students agree that the Oshibana book is developed as a learning medium. The results of the curriculum analysis show that the curriculum used in schools is the 2013 curriculum.
2. The process of compiling the Oshibana book consists of several components, namely: cover front, preface, table of contents, list of pictures, learning outcomes, book contents (plant classification materials and Oshibana materials).), assignments, how to use and care for Oshibana learning media, reference lists and covers back.
3. Material expert validation obtained 72% results with effective criteria as a learning medium.

4. Media expert validation obtained 81.67% results with effective criteria as learning media.
5. The validation of the seventh grade science teacher obtained 92% results with the criteria of being very effective as a learning medium.
6. The results of the readability questionnaire by class VII students obtained an average result of 88.01% with the criteria of being very effective as a learning medium.
7. The results of the trial to students by comparing the N-gain value of the control class and the experimental class 0.0185 0.6667 the results are the average N-gain value of the experimental class is higher than the control class, while the results of hypothesis testing using the Independent Sample Test show the results 0.00 0.05 there is a significant difference between the experimental class that uses the Oshibana book and the control class that does not use the Oshibana book. In conclusion, Oshibana's book is effective as a medium for studying Plant Classification material.

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REFERENSI

Afifah, N. 2014. Effectiveness of Herbarium and Insectarium on the Theme of Classification of Living Things as a Supplement to Integrated Science Learning Media for Class VII MTs. Semarang: Semarang State University.

Arifin, Z. 2009. Educational Evaluation. Bandung: PT. Rosdakarya Youth.

Arrijani. 2005. Use of Herbarium Media, Botanical Cards and Plant Illustrations in Mastering Lecture Materials. Tondano: FMIPA UNIMA.

Ashar. 2011. Creative Developing Learning Media. Jakarta: King Perindo Persaja.

Cahyadi, RA 2019. Development of ADDIE Model-Based Teaching Materials. Surabaya: Surabaya State University.

Chaeruman. 2008. Developing a Learning System with the ADDIE Model. Jakarta: PT Pemuda Rosdakarya.

Fitriyana, E. 2016. Development of Herbarium Sheet for Ferns (Pteridophyta) as a Media for Learning Materials for Ferns in High School. Semarang: Semarang State University.

Hamzah, NL 2011. Communication & Information Technology Learning. Jakarta: PT. Earth Literature.

Lutfiyah, F. 2018. Oshibana: Beautiful Handmade Indonesian Endemic Biodiversity Based. Semarang: PGRI University Semarang.

Munadi, Yudhi. 2013. Learning Media. Jakarta: GP Press Group.

Oshibana, R. 2004. Oshibana The Art of Flower Arrangement Press From Japan. Bandung: Demedia Pustaka.

Ranti, ES 2019. The Effect of Herbarium on Children's Creativity Development at Kasih Ibu I PAUD outside Parit. Padang: Padang State University.

Ratnasari, RD 2017. Development of Herbarium as Learning Media for Low Plants. Jember: Muhammadiyah University of Jember.

Rita Rahmariati, S. 2015. I-SETS (Islamic, Science, Environment, Technology And Society) Learning on Student Learning Outcomes", Anterior journal, Vol. 14, No. 2.

Sri Sudarmiyati, Tatik Chikmawati. 2016. History of Plant Taxonomy Classification and Development. Surabaya: CV Sinar Mandiri.

Sugiyono. 2018. Qualitative Quantitative Research Methods and R&D. Bandung: Alphabeta.

Susilo, MJ 2015. Analysis of the Quality of Insectarium and Herbarium Learning Media for Biology Subjects. Yogyakarta: Ahmad Dahlan University.

UNHAS, L. 2015. Format of Teaching Materials, Textbooks, Modules and Practice Guides. Makassar: Hasanudin University.

Windayati, VP 2016. Development of Herbarium Learning Media on Plant Organ Materials at SMPN 5 Rambah Hilir. Rokan Hulu: University of Paris Pengaraian.

Wirakusumah, M. 2018. Preserved Flower as an Alternative Flower Arrangement. Bandung: Pasundan University Bandung.