

Validity of Traditional Ceremony Based Herbarium of Mungguh Molo in Jombang Regency

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ABSTRACT

The purpose of this study was to validate the herbarium which was developed based on the assessment of herbarium expert and learning media expert. The types of plants used in the manufacture of this herbarium were the types of plants used in the Mungguh Molo traditional ceremony in Jombang Regency. This study referred to the R&D model which consists of 10 stages, but only first five stages were used by researchers. The five stages were potential and problems, data collection, product design, design validation, and design revision. Interview guides and validation sheets were used as research instruments. The interview guide was used to collect data about the types of plants used in traditional ceremony of Mungguh Molo in Jombang Regency. The validation sheets were used to determine the value and feasibility of the developed herbarium. The data obtained were analyzed descriptively. Herbarium expert gave a score of 80 so that the herbarium developed obtained the feasible criteria. Learning media expert gave a score of 95 so that the herbarium met the criteria very feasible. Both validator stated that the herbarium could be used as a biology learning media.

Keywords: Herbarium; Mungguh Molo; Traditional Ceremony; Learning Media

INTRODUCTION

Mungguh Molo is a traditional ceremony to mark the installation of roofs in Javanese communities (Huda, 2017), including in Jombang Regency. This traditional ceremony is an example of local wisdom that contains philosophical and pedagogical values for people's lives, especially people in the local area. The results of interviews conducted by researchers in February 2021 revealed that there are 24 types of plants that are generally used in this traditional ceremony in Jombang Regency. These plant types are *Saccharum officinarum*, *Musa paradisiaca*, *Oryza sativa*, *Oryza sativa glutinosa*, *Cocos nucifera*, *Syzygium polyanthum*, *Cucumis sativus*, *Arachis hypogaea*, *Allium sativum*, *Allium ascalonicum*, *Capsicum frutescens*, *Citrus hystrix*, *Aleurites moluccanus*, *Curcuma domestica*, *Curcuma zanthorrhiza*, *Zingiber officinale*, *Kaempferia galanga*, *Pangium edule*, *Ipomoea aquatica*, *Vigna sinensis*, *Piper betle*, *Magnolia alba*, *Jasminum sambac*, and *Rosa* sp. This finding is a potential for the development of biology learning media.

The type of learning media that can be developed is the herbarium. Herbarium is a dry preservation of plants that displays the morphological structure of plants (Syamsiah et al., 2020). The development of a herbarium based on the Mungguh Molo traditional ceremony in Jombang Regency has never been carried out. The integration of local wisdom in learning media is expected to provide knowledge and foster a sense of love for local culture among the younger generation (Lidi, 2019). Learning media in the form of herbarium can be used as a tool to teach material about plants. Herbarium is known to increase interest in learning and student learning outcomes (Asra et al., 2019). The development of learning media needs to be followed by the expert validation stage (Sugiyono, 2019). The experts involved must have expertise in the validated field. Therefore, this study aims to determine the results of the validation of herbarium expert and learning media expert on the developed herbarium.

METHOD

This research is a development research and refers to the R&D model. This model consists of ten

stages, but only the first five stages were carried out in this study. The stages carried out are potential and problems, data collection, product design, design validation, and design revision (Sugiyono, 2019). The instruments used are interview guide and validations sheets. The interview guide contains five questions to collect data about the Mungghah Molo traditional ceremony and the types of plants used in it. The validation sheets contain 13-16 statements to assess the feasibility of the developed herbarium. The statements in the validations sheets are adjusted to the validators' expertise, namely herbarium expert and learning media expert. The data obtained were analyzed descriptively. The score obtained from the validators were calculated by the mean formula, then interpreted in the specified criteria (Table 1).

Table 1 Interpretation Criteria

Value Range	Criteria	Interpretation
85,01 – 100,00	Very feasible	The product can be used without revision
70,01 – 85,00	Feasible	The product can be used but needs a little revision
50,01 – 70,00	Quite feasible	The product needs many revisions before it can be used
1,00 – 50,00	Not feasible	The product cannot be used

RESULT AND DISCUSSION

The results of this study are the results of the validation of herbarium expert and learning media expert on the developed herbarium. The herbarium expert's assessment through the validation sheet is shown in Table 2, while Table 3 shows the results of the assessment by learning media expert.

Result

The number of statements in the validation sheet used by the herbarium expert is 13. The range of scores for each statement is 1-5 with a score of 1 being the lowest score and 5 being the highest score. Three statements got a score of 3, seven statements got a score of 4, and three statements got a score of 5 from herbarium expert. The total score obtained from the herbarium expert was 52, so the calculated value was 80 and the criteria met was feasible.

Table 2 Herbarium Expert Validation Result

No.	Statements	Score
1.	Plant specimens in the developed herbarium in clean condition (no dirt and/or fungus)	5
2.	Plant specimens in the developed herbarium in good condition (no defective organ)	4
3.	Plant specimens in the developed herbarium display vegetative organs (root, stem, and/or leaves)	3
4.	Plant specimens in the developed herbarium display reproductive organ (flower, fruit, and/or seed)	3
5.	The attached specimen labels contain information regarding the identity of the plants used in the herbarium	3
6.	Writing scientific names of plants in specimen labels exactly according to applicable regulations (italic or underlined per word)	5
7.	The size of the plant specimen used is proportional to the size of the paper to be attached	4
8.	Plant specimens neatly pasted on paper	4
9.	Plant specimens display plant morphological characteristics well	4
10.	Specimen label placement is precise so that it is easy to read	5
11.	The appearance of the developed herbarium is attractive	4
12.	The herbarium developed allows it to be used as a learning media in plant morphological structure material	4
13.	The shelf life of the herbarium is quite good	4
	Total	52
	Value	80
	Criteria	Feasible

The number of statements in the validation sheet used by the learning media expert is 16. The score range for each statement is the same as the score range on the herbarium expert validation sheet. As many as four statements got a score of 4 and the other twelve statements got a score of 5 from learning media

expert. The total score obtained from the learning media expert was 76, so the calculated value was 95 and the criteria met was very feasible.

Table 3 Learning Media Expert Validation Result

No.	Statements	Score
1.	The suitability of the media with the learning objective: “describe the morphological structure of plants”	5
2.	The developed herbarium can be used as a learning media for class X students	4
3.	The developed herbarium can be used as a learning resource for seed plant material	4
4.	The developed herbarium can develop students’ learning motivation	5
5.	The developed herbarium can attract the attention of students	5
6.	The developed herbarium can be used as a tool to understand the concept of plant morphological structure	5
7.	The developed herbarium can be used as a tool to remember the concept of plant morphological structure	5
8.	The developed herbarium can be used as a tool for retention (repetition) of the concept of plant morphological structure	5
9.	The developed herbarium can be used as an effort to provide feedback in learning	5
10.	Herbarium developed in accordance with the learning environment of students (classroom learning)	4
11.	The developed herbarium is easy to use in learning activities	5
12.	The developed herbarium can increase the efficiency of learning time	5
13.	The developed herbarium can be relatively economical in its procurement	5
14.	The developed herbarium has a good look	4
15.	The developed herbarium is safe for students to use	5
16.	The developed herbarium is easy to store	5
	Total	76
	Value	95
	Criteria	Very feasible

Discussion

Herbarium expert assessed the feasibility of the developed herbarium from a theoretical point of view. In general, the herbarium is feasible, although there are some points that need to be improved. These points are reflected in statements number 3, 4, and 5 which get a score of 3 from herbarium expert. The first thing that needs to be improved is the completeness of the plant organs displayed in the herbarium. Herbarium expert considered that the herbarium specimens had not displayed complete vegetative and reproductive organs. This happens because at the time of making the herbarium, some plants have not yet entered the flowering or fruiting period. The completeness of organs in herbarium specimens is important to note because it will affect the use value of the herbarium (Nisaa et al., 2019). The second thing that needs to be fixed is the specimen labels. Herbarium expert suggest adding plant names in Indonesia to the specimen labels to make it more informative. Researchers have carried out this suggestion. The name of the plant in the local language needs to be known for easy identification (Marlina et al., 2016).

There are also superior points of the developed herbarium, namely statements number 1, 6, and 10 which get a score of 5. The first thing that gets a high score is the cleanliness of the herbarium specimen. Researchers have cleaned plant specimens with clean running water and sprayed 70% alcohol to prevent spoilage. This is in accordance with the procedure for making herbarium according to Sumardi et al. (2020). The second thing is writting the scientific name of the plants. Scientific names of plants must meet the rules of Binomial Nomenclature, namely using Latin or a Latinized language, consisting of two words, the first word begins with a capital letter, both words are italicized or underlined per word (Damayanto et al., 2020). The scientific name of the plant written on the specimen label is exactly in accordance with the rules of Binomial Nomenclature. The third thing is the correct position of the specimen label on the paper. Specimen labels are an important part of the herbarium, as they provide

information about the plant (Muflihaini, 2017). Specimen labels on the developed herbarium are proportional so that they are easy to read and do not cover the plant specimens displayed.

Learning media expert assessed the feasibility of the developed herbarium in terms of its usefulness as a learning media. The assessment given is very high with a value of 95 and the criteria is very feasible. Of the 16 statements, four statements received a score of 4, while the other twelve received a score of 5. Four things that need to be improved a little according to learning media expert are reflected in statements number 2, 3, 10 and 14. Statements number 2 and 3 are interconnected in determining the score of the validator. Learning media expert considered that the developed herbarium could be used as a learning media for class X students because it was in accordance with the basic competencies in the curriculum. The drawback is that the examples of plants shown are limited to the Angiosperm group. The validator suggests adding examples of plants from the Gymnosperm group. Researchers have not been able to do this because the traditional ceremony of Munggah Molo which is the basis for developing this herbarium does not use Gymnosperm plant species. The ideal learning media is able to provide complete examples of the material being studied (Nurrita, 2018).

Statement number 10 explains the suitability of the herbarium to be a learning media in classroom activity. Learning media expert assesses that this herbarium can also be used for outdoor learning activities. Herbarium is known to be a learning media for students in high school and can improve their learning outcomes (Mualimaturrochmah et al., 2020). The last point that needs to be improved a bit according to the learning media expert is the herbarium display. Some specimens appear blackened giving a less attractive appearance. The validator suggests replacing it with a new specimen. Researchers have followed the advice. The change in the color of the specimen to black is probably due to the decay process. Spoilage can occur due to poor cleaning or drying (Tamin et al., 2017).

CONCLUSION

The herbarium that was developed through this research obtained feasible and very feasible criteria from herbarium expert and learning media expert. This indicates that content validation has been met. Further research needs to be done to determine construct validity and practicality.

REFERENCE

- Asra, R., Johari, A. & Haryadi, B. (2019). Pemanfaatan media herbarium untuk meningkatkan hasil belajar siswa di Pondok Pesantren Al Hidayah. *Jurnal Karya Abdi Masyarakat*, 3(1), 41-46.
- Damayanto, I. P. G. P., Fastanti, F. S. & Dalimunthe, S. H. (2020). Pemanfaatan portal basis data daring dalam validasi nama ilmiah jenis dan suku tumbuhan. *Berkala Ilmu Perpustakaan dan Informasi*, 16(2), 170-183.
- Huda, M. (2017). Islam dan tradisi Jawa: pencarian motif dan makna dalam tradisi selamatan mendirikan rumah di dusun Gentan Ngrupit Jenangan Ponorogo. *Dialogia*, 14(2), 292-304.
- Lidi, M. W. (2019). Ragam implementasi materi lokal melalui komponen-komponen pembelajaran dalam pembelajaran sains. *Jurnal Dinamika Sains*, 3(1), 10-19.
- Marlina, S., Panjaitan, R. G. P. & Aryati, E. (2016). Pengembangan herbarium hasil inventarisasi tumbuhan obat sebagai media pembelajaran pada subpokok bahasan Angiospermae. *Jurnal Pendidikan dan Pembelajaran Khatulistiwa*, 5(2), 1-12.
- Muflihaini, M. A. (2017). *Herbarium kering*. Magelang: UNTIDAR.
- Mualimaturrochmah, Retnoningsih, A. & Rahayuningsih, M. (2020). Pteridophyta herbarium based on science, technology, engineering, and mathematic in plantae material in senior high school. *Journal of Inovative Science Education*, 9(2), 126-135.
- Nisaa, R. A., Lestari, S. & Astuti, Y. (2019). Pelatihan pembuatan herbarium sebagai media pembelajaran biologi berbasis lingkungan di SMA Muhammadiyah 1 dan 2 Tangerang. *Jurnal Pengabdian Masyarakat MIPA dan Pendidikan MIPA*, 3(1), 4-10.
- Nurrita, T. (2018). Pengembangan media pembelajaran untuk meningkatkan hasil belajar siswa. *Misykat*, 3(1), 171-187.
- Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.
- Sumardi, S., Handayani, T. T. & Ekowati, C. N. (2020). Pelatihan pembuatan herbarium sebagai pengayaan media pembelajaran IPA-Biologi bagi guru SMP MGMP IPA di Kecamatan Way

- Tening Kabupaten Lampung Barat. *Prosiding Konferensi Nasional Pengabdian kepada Masyarakat dan Corporate Social Responsibility (PKM-CSR)*, 3, 806-809.
- Syamsiah, Nurhayati, B. & Hiola, S. F. (2020). Pemanfaatan spesimen herbarium sebagai media pembelajaran bagi guru-guru IPA/Biologi di Kabupaten Enrekang. *Dedikasi*, 22(1), 99-103.
- Tamin, R. P., Anggraini, R. & Ulfa, M. (2017). Penyuluhan dan pelatihan eksplorasi botani hutan dalam upaya konservasi hutan. *Jurnal Karya Abdi Masyarakat*, 1(2), 119-128.