

Digitalization of Toba Batak Ethnic Ornaments

Adek Cerah Kurnia Azis¹, Siti Khodijah Lubis², Gamal Kartono³,
Muhammad Anggie Januarsyah Daulay⁴

adekcerah@unimed.ac.id

Department of Fine Arts, Faculty of Languages and Arts^{1,3}
Department of Indonesian Language and Literature⁴
Universitas Negeri Medan
Willem Iskandar Street, Pasar V Medan Estate, 20371, North Sumatra, Indonesia

Madrasah Ibtidaiyah Teacher Education Study Program, FTIK²
Universitas Islam Negeri Syekh Ali Hasan Ahmad Addary Padangsidempuan
T. Rizal Nurdin Street Km. 4,5 Sihitang, Padangsidempuan, 22733, North Sumatra, Indonesia

Abstract. The purpose of this study was to produce valid, practical, and effective teaching materials through the digitization of Toba Batak ethnic ornaments. The research method used includes research and development with the 4-D model (Four D Models). The steps of using this model are to define, design, develop, and disseminate. The results of research on teaching materials are known: a) validity of 78% and valid enough category, b) Practicality of 77% and practical enough category, and c) effectiveness of 83.26% with an effective category. Teaching material can be utilized by lecturers and students as the primary guideline and handbook in the North Sumatra Ethnic Decorative Variety Course.

Keywords: Teaching Materials, Digitization, Toba Batak Ethnic, Ornaments

1. Introduction

Technology today is growing rapidly and influencing many fields including education, economics, and the arts, depending on how a person utilizes existing technology [1]. Public demands also make the education world always keep up with technological developments aimed at increasing the education quality, and using technology that is most adapted in the implementation of learning.

Developments in technology and information are perceived by everyone to meet the demands of the current generation, be it the community, students at school, and students in higher education [2]. The positive impact of technological development in the lives of students in higher education has influenced the fields of technology, science, and art, especially in the field of fine arts, especially in making works learning fine arts in the field of practice [3], provides a slight shift due to this technological development of works of art that were previously done manually, through the advancement of digital media, the process and creation

has changed to digital [4]. The results of digital-based works are known as digital art whose process has used sophisticated devices and applications.

The Department of Fine Arts, Faculty of Language and Arts, Universitas Negeri Medan has a course on North Sumatra Ethnic Decorative Variety (RHESU), which studies the various decorative varieties found in North Sumatra. One of the decorative varieties found in North Sumatra is the Toba Batak Ethnic Decorative Variety. Gorga (carving) is the name of the Toba Batak ornamental motif because its shape is engraved on the wood material found in the Toba Batak traditional house [5].

In the North Sumatra Ethnic Decorative Variety Course, especially in learning the Toba Batak Ethnic Decorative Variety, the ability possessed by students is very good, but the process of working on decorative varieties is still drawn manually. Pre-survey conducted in the North Sumatra Ethnic Decorative Variety course in January-June 2022, students have never used digital-based media in the drawing process of the Toba Batak Ethnic Decorative Variety. Students still use media manually both through drawing books and other media.

Based on the above description the development of teaching materials by digitizing the Toba Batak Ethnic Decorative Variety through Procreate based on p-books and e-books is needed. Procreate media is very influential in producing maximum results in making digital artworks. The device used is the iPad Gen 9 2020. In addition to maximizing the results of digital artworks, Procreate has various features that make illustrators easily and provide a good context for making works [6]. Procreate also has 64-bit color sampling and various tools such as brush libraries for paint, smudging, and erasing [7].

The offering of teaching materials is also based on p-books and e-books which have ease of access, and use and can be found on desktops and student Android phones [8]. This teaching material will be able to improve student learning interest (Hendrickson, 2021), making students' insights broad, and can be an attractive main handbook for students in the digitization-based process of creating the Toba Batak Ethnic Decorative Variety. Lecturers can also use this teaching material as a reference in educating the North Sumatra Ethnic Decorative Variety Course (RHESU) to students.

2. Methods

The research method used includes research and development with the 4-D model (Four D Models). The steps of using this model are to define, design, develop, and disseminate [9]. Furthermore, the design of the teaching material development flow is in the figure below.

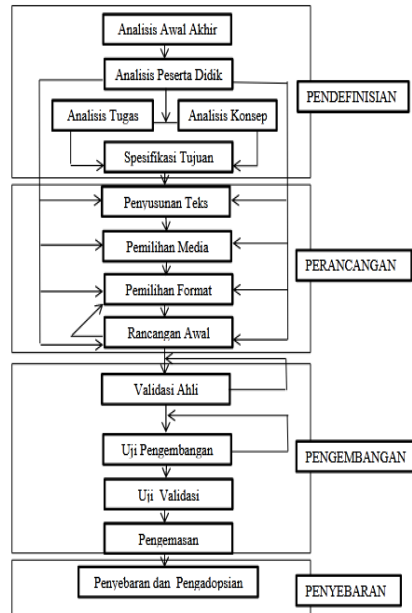


Fig. 1 Flow Design of Teaching Material Development

Sampling with random sampling technique, where the selected sample is students who have followed the North Sumatra Ethnic Decorative Variety Course, namely 12 students. Data collection instruments with a questionnaire in the form of a Likert scale. While data analysis consists of tests: 1) validity, 2) practicality and, 3) effectiveness of the module.

3. Results and Discussion

The define stage includes analyzing: 1) curriculum, 2) concept, and 3) students. Furthermore, at the design stage by designing the cover of teaching materials. The cover has colors that are adapted to the colors of Toba Batak ornaments, namely red, black, and white. The cover image is designed very interestingly so that it can increase students' attention to study the content of teaching materials [10]. The design on the cover can be seen in the picture below.



Fig. 2 Cover Design of Teaching Materials

The development stage has validation from two validators, one validator who is an expert in the field of design and another expert in the field of language. the results of the assessment by the validators are listed in the table below.

Table 1 . Assessment Results by Validators

No	Variables	Degree of Achievement (%)	Category
1.	Contents	77%	Valid Enough
2.	Construct	77%	Valid Enough
3.	Display of Teaching Materials	85%	Valid
4.	Language	75%	Valid Enough
	Average	78%	Valid Enough

Variable validator assessment results in table 1 which are 4, namely: 1) the content of teaching materials is 77% and valid enough category, 2) the construct is also 77% and valid enough category, 3) the display of teaching is 85 and valid category, while 4) language is 78% with a valid enough category. Overall the average validity is 78% and valid enough category. Description of teaching materials content/material must be organized systematically, this makes it easy for users to comprehend the teaching material. In line with [11] developing teaching materials should have criteria: 1) essential, 2) interesting, 3) meaningful, 4) relevant, 4) contextual, and 5) sustainable.

Furthermore, the practicality of teaching materials was assessed by students of the Fine Arts Department who were currently studying the North Sumatra Ethnic Decorative Variety Course. The analysis results are listed in the table below.

Table 2. Results of Practicality Assessment of Teaching Materials by Students

No	Variables	Score Achievement Level (%)	Category
1.	Learnability	79	Practical Enough
2.	Efficiency	77	Practical Enough
3.	Effectiveness of Time	75	Practical Enough
	Average	77	Practical Enough

There are 3 variables of module practicality assessment results assessed by students of the Fine Arts Department, namely: 1) ease for users of 79% with a practical enough category, 2) usability of 77% with a fairly practical category, and 3) effectiveness of 75% with a practical enough category. Overall, the average practicality was 77% with a practical enough category. Practical teaching materials can make lecturers easily guide students to understand concepts and can be used for individual student learning [12].

Then to get the results of the effectiveness of teaching materials by conducting observations on student activities during the learning process [13]. The results of the student activity are listed in the table below.

Table 3. Student Activities in The Learning Process

No	Variables	Score Achievement Level (%)	Category
1.	Read teaching materials and do exercises	100	Very Active
2.	Students ask questions during the lesson	66.66	Active
3.	Answering questions from the lecturer or from other students	66.41	Active
4.	Complete assignments given by the lecturer	100	Very Active

Student activity in the learning process has 4 categories, namely: 1) read teaching materials and do exercises in teaching materials has an average of 100% with a very active category, 2) students ask questions during the lesson has an average of 66.66% with an active category, 3) answering questions from the lecturers or other students has an average of 66.41% with an active category, and 4) completing assignments given by lecturers has an average of 100% and very active category.

Based on the practical results of teaching materials, 12 students passed, and 0 students did not pass. This is also due to the results of observations made by observers, where most students are actively involved in the learning process. [14] suggests that the utilization of e-books in

learning can make the learning process more effective, especially in stimulating student learning motivation, so that it can make student learning achievement increase.

4. Conclusions

The developed teaching materials are known to have a) validity of 78% and valid enough category, b) practicality of 77% and practical enough category, and c) effectiveness of 83.26% with an effective category. Teaching material can be utilized by lecturers and students as the primary guideline and handbook in the North Sumatra Ethnic Decorative Variety Course.

References

- [1] Cho, Y.: Application Characteristics and Innovation of Digital Technology in Visual Communication Design. *Advances in Multimedia* (2022)
- [2] Akour, M., & Alenezi, M.: Higher education future in the era of digital transformation. Vol. 12, p. 784. *Educ Sci*, United Kingdom (2022)
- [3] Lubis, S. K.: EVALUASI KINERJA GURU SENI BUDAYA DITINJAU DARI KESESUAIAN LATAR BELAKANG PENDIDIKAN GURU DENGAN ASPEK SENI YANG DIAJARKAN. Vol. 11, pp. 394–401. *Gorga: Jurnal Seni Rupa*, Indonesia (2022)
- [4] Orishev, J., & Achilov, S.: DIGITAL TECHNOLOGIES AS AN EDUCATIONAL PROCESS IN PREPARING FUTURE TEACHERS FOR PROJECT ACTIVITIES. Vol. 2, pp. 425–429. *Science and innovation*, Ukraina (2023)
- [5] Saragi, D.: Pengembangan Tekstil Berbasis Motif dan Nilai Filosofis Ornamen Tradisional Sumatra Utara. Vol. 28, pp. 161–174. *Panggung*, Indonesia (2018)
- [6] McCready, M.: On Born Digital Artwork, New Drawing Applications, and New Opportunities. Vol. 48. *Visual Resources Association Bulletin*, United States (2021)
- [7] Cho, Y.: iPad & Procreate. *Tutorials of Visual Graphic Communication Programs for Interior Design 2* (2022)
- [8] Azis, A. C. K., Lubis, S. K., Kartono, G., & Daulay, M. A. J.: Digitalisation of Teaching Materials for Toba Batak Ethnic Decorative Variety with Procreate Media Based on p-Books and e-Books. Vol. 9. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, Indonesia (2023)
- [9] Thiagarajan, S.: *Instructional development for training teachers of exceptional children: A sourcebook* (1974)
- [10] Sugito, S., Atmojo, W. T., Misgiya, M., & Azis, A. C. K.: Development of p-Book and e-Book Based Modules in Batik Creation in Fine Arts Department. Vol. 9. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, Indonesia (2023)
- [11] Kasman, K., & Lubis, S. K.: Teachers' Performance Evaluation Instrument Designs in the Implementation of the New Learning Paradigm of the Merdeka Curriculum. Vol. 8, pp. 760–775. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, Indonesia (2022)

- [12] Yang, C.: Online teaching self-efficacy, social–emotional learning (SEL) competencies, and compassion fatigue among educators during the COVID-19 pandemic. Vol. 50, pp. 505–518. *School Psych Rev*, United Kingdom (2021)
- [13] Granberg, C., Palm, T., & Palmberg, B.: A case study of a formative assessment practice and the effects on students' self-regulated learning. Vol. 68, p. 100955. *Studies in Educational Evaluation*, United Kingdom (2021)
- [14] Sung, H. Y., Hwang, G. J., Chen, C. Y., & Liu, W. X.: A contextual learning model for developing interactive e-books to improve students' performances of learning the Analects of Confucius. Vol. 30, pp. 470–483. *Interactive Learning Environments*, United Kingdom (2022)