Development of Texture Diorama Media (Diotek) on Art Texture Material Art for Elementary School Students

Olivia Eka Khusdianti
Elementary School Teacher Education Study Program, Faculty of Education
University of PGRI Kanjuruhan Malang
Malang, Indonesia
oliviaekakhusdianti@gmail.com

Cicilia Ika Rahayu Nita
Elementary School Teacher Education Study Program, Faculty of Education
University of PGRI Kanjuruhan Malang
Malang, Indonesia
cirn@unikama.ac.id

Andika Gutama
Elementary School Teacher Education Study Program, Faculty of Education
University of PGRI Kanjuruhan Malang
Malang, Indonesia
andika@unikama.ac.id

Abstratct - *In the process of visual arts learning at SDN Sukun 2, grade IV, the teacher has not yet used media concrete, ofen what is used in art education is worksheets, blackboard, and videos learning, causing students to be less focused in their studies, understanding of the material learning is still lacking, and the learning outcomes of students in the learning of fine arts on the texture material is still not optimal and needs to be improved further. The purpose of this research is to undersand the development process, feasibility, practicality, and the effectiveness of developing texture diorama media (diotek) on art texture maerial for students elementary school. This research uses the Research And Development (R&D) method with using the ADDIE model, including Analyze, Design, Development, Implementation, and Evaluasi. The subjects of this research involve experts in the fields of material, language, media, as well as theachers and students in testing the practicality to obtain the category "very worthy". The practicality test received the "Practical" category, while the students effectiveness test received the "Fairly Effective" category. It can be concluded that the texture diorama media (diotek) in art education is deemed feasible, practical and effective for use as a medium for fine arts education in elementary schools.*

Keywords— *Diorama, Texture, Elementary School, Students*

I. INTRODUCTION

Learning in elementary school is a mandatory activity that allows students to interact with others and gain knowledge as preparation for the future. This process is designed with good strategies and services to achieve learning objectives, which also serves as motivation for teachers and students through enjoyable interactions. As stated by Oktamia Anggraini Putri (2022), "learning at school provides insights for students on how they can interact with their friends or older people." In the independent curriculum, one of the important components is visual arts education, which plays a significant role in developing students' social skills and cultural appreciation. Visual arts education includes visual elements such as points, lines, shapes, colors, textures, content, space, and light (Ummah, 2019). The goal is to develop children's creativity and educate them through training in

creative skills, cultural understanding, appreciation of art, self-expression, art discipline, and multicultural concepts. In the context of visual arts education in elementary schools, teachers play an important role in guiding students to explore art. Therefore, teachers must understand technology, media, materials, tools, and processes in the creation of artworks (Iraqi, 2023).

Visual arts education in elementary schools now refers to the Merdeka Curriculum, which differs from the previous curriculum in terms of teaching materials, implementation, and assessment. This curriculum emphasizes the characteristics and needs of students, with learning structured based on their developmental phases (Azis, 2023). In the fourth grade, one of the visual arts subjects is Experimenting with Texture, which falls under the creating element (Making/Creating). The learning outcome is the ability of students to create two- or three-dimensional works through the exploration of visual art elements such as line, shape, texture, space, and color. Texture itself is the quality of a surface that can be perceived through sight and touch, both real and virtual (for example, an image of a stone that appears to have fibers). To achieve this learning objective, various supporting components are needed.

In the learning process, there are several important components such as objectives, materials, methods, media, teachers, students, and assessments or evaluations. According to Muhammad (2021), teachers are a strategic component in managing the learning process in the classroom, with responsibilities that are not easy. Mistakes in leading the learning process can result in students' competencies remaining at a standard level (Wahana Sari, 2023). All components of learning depend on and interact with each other to achieve the success of the learning process (Riyana, p. 4). In this case, the author uses diorama-based media to enhance understanding, interest, and facilitate students' learning.

Learning media is a bridge between educators and students to stimulate student engagement in a complete and meaningful learning process. This media not only conveys the material but also contains moral messages to shape students' character. Mustaqim (2017) states that enjoyable learning is influenced by the development of media that can enhance students' interest in learning. One of the effective media is a diorama. According to Hariati (2019), diorama media is very effective for use in social studies learning in fifth-grade elementary school, because it helps students understand the material visually and concretely (Amalia, 2018).

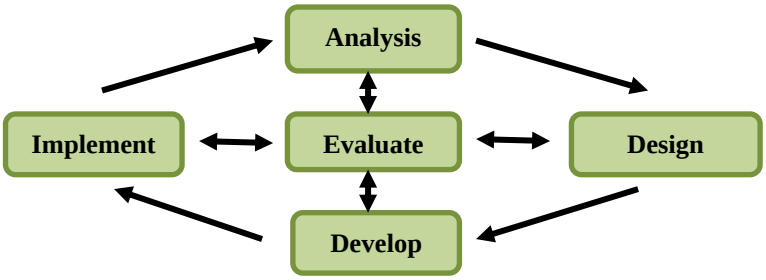
Based on the results of observations and interviews with the class teacher at SDN Sukun 2 Malang, the art education on texture material in grade 4 has not yet utilized concrete media. The teacher stated that the learning still relies on worksheets, the blackboard, and educational videos. The issues that arise in the classroom include a lack of student focus, low understanding of the material, and a greater interest in practical activities. As a result, students become less enthusiastic, passive, and often talk to themselves. The learning outcomes are also not optimal because many students have difficulty understanding the texture material. This school also faces limitations in the use of concrete media, which should be addressed by developing learning media to aid student understanding.

Previous research by Nate (2022) titled "Development of Diorama Media in Science Learning for 5th Grade at MIN 11 Aceh Tengah" shows that the diorama media is considered very feasible by media and material experts. A similar study was conducted by Rika Widianita (2023) titled "Development of Diorama Learning Media for Social Studies to Improve Economic Role Analysis in the Social Life of 5th Grade Students at SDN Mrican 1," which showed very practical results based on questionnaires from teachers (86%) and students (95%). The research to be conducted differs in the learning content and grade level, specifically in visual arts with a focus on texture for 4th grade, but still uses the same learning media, which is a diorama.

II. METHOD

This research uses the Research and Development (R&D) method with the ADDIE development model, which includes five stages: Analyze, Design, Development, Implementation, and Evaluation. In the analysis stage, the researcher conducted an analysis of the curriculum, issues, and needs. The analysis results show that in the visual arts learning on texture material in the 4th grade at SDN Sukun 2, the teacher has not yet used concrete media, causing students to be less focused and their learning outcomes to be suboptimal. Therefore, a learning media in the form of a texture diorama (diotek) is needed, designed according to the characteristics of the students, using strong, safe, and bright-colored materials, such as cement, stones, red brick powder, sand, clay, sawdust, wood, and synthetic grass.

At the development stage, the media is organized according to the design and validated by media, material, and language experts. After being deemed feasible, the product was implemented in the 4th grade at SDN Sukun 2 through limited trials (10 students), extensive trials (26 students), and involving teachers to assess the practicality of the media. The success of the implementation is measured through pretest and posttest. The final revision was made based on feedback from the response questionnaire.



Picture 1. The stages of the ADDIE Model from (Rika Widianita, 2023)

This texture diorama development research uses qualitative and quantitative data. Data collection was conducted through questionnaires filled out by respondents to assess the feasibility and practicality of the media. Qualitative data were obtained from the implementation results of the texture diorama through validation sheets, questionnaires, as well as pretests and posttests to assess the feasibility, practicality, and effectiveness of the product. Meanwhile, quantitative data were obtained from the scores given by validators, students, and teachers. The assessment of feasibility, practicality, and effectiveness is analyzed using percentages and specific formulas.

Table 1. Feasibility Percentage

Percentage	Category
81% - 100%	Very Worthy
61% - 80%	Worthy
41% - 60%	Enough
21% - 40%	Not Worthy
0% - 20%	Very Unworthy

Source. (Meianti, 2018)

$$\text{Percentage of Eligibility} = \frac{\text{Total Skor}}{\text{Maximum Score Count}} \text{ x } 100\%$$

Table 2. Practicality Percentage

Range of Percentage Scores Obtained	Category
90% - 100%	Very Practical
80% - 89%	Practical
65% - 79%	Quite Practical
55% - 64%	Less Practical
0% - 55%	Very Impractical

Source. (Handayani, 2020)

$$\text{Percentage of Practicality} = \frac{\text{Score of the evaluation results}}{\text{Ideal maksimum score}} \text{ x } 100\%$$

Table 3. Percentage of N-Gain Score Effectiveness

Percentage (%)	Category
>76%	Effective
56-75%	Quite Effective
40-55%	Less Effective
<40%	Ineffective

Source. (Febrinita, 2022) dimodifikasi

$$\text{Effectiveness Percentage N-Gain Score} = \frac{\text{Skor posttest} - \text{skor pretest}}{\text{skor maks} - \text{skor pretest}}$$

After calculating the N-Gain Score, the researcher conducted a statistical test to assess the difference in pretest and posttest scores using textured diorama media. Before the T-Test was conducted, prerequisite tests for normality and homogeneity were first carried out. The results show that the posttest data are not normally distributed, but are homogeneous. Because the data is not normally distributed, the researcher used the Wilcoxon Test as an alternative to analyze the mean differences, with the help of SPSS for Windows at a significance level of 0.05.

H0: There is no significant difference between pretest and posttest scores.
Ha: There is a significant difference between the pretest and posttest scores.

III. RESEARCH RESULT

This research uses the R&D method with the ADDIE model, through five stages: Analysis, Design, Development, Implementation, and Evaluation. Analysis includes the curriculum, problems, and needs. The Merdeka Curriculum is used at SDN Sukun 2 for the 4th-grade visual arts class, focusing on texture experiments in creating two- or three-dimensional works.

Problem analysis shows that the learning media used are still limited to worksheets, blackboards, and videos, while students are less focused, have low material comprehension, and are more interested in hands-on practice. The media used by the teacher is considered less engaging, causing students to become passive and unenthusiastic. The learning outcomes are also not optimal, especially in understanding the concept of texture.

From the needs analysis, it was found that there is a need for concrete media to assist in the delivery of material, namely a texture diorama. At the design stage, the diorama was developed with various types of textures: hard (cement and stone), rough (red brick powder, sand, clay, sawdust), wavy (wooden pieces), and smooth (synthetic grass).

At the development stage, the researchers revised the product design based on the validation results to determine the feasibility of the textured diorama media. Validation was conducted by subject matter experts, language experts, and media experts, each providing input and assessment on the developed media.

The texture diorama developed by the researchers has been validated by material experts, language experts, and media experts to assess its feasibility. The validation results show that the diorama is deemed "Very Feasible" with the following details: the subject matter expert gave a percentage of 93.75%, the language expert 100%, and the media expert also 100%. Although the results are very good, there are some inputs that need to be considered, namely punctuation improvements and the addition of cards and a play guidebook as media supplements.

(a) Punctuation before revision

(b) Punctuation after revision

(c) card design

(d) play guide
personal source

At the implementation stage, a practicality test was conducted with the fourth-grade teacher and 26 students at SDN Sukun 2 Kota Malang as research subjects. Teachers and students were asked to observe the developed texture diorama, and then a trial was conducted through a questionnaire. The results of the limited trial with 10 students showed a practicality percentage of 86.2%, while the extensive trial with 26 students reached 86.5%, both falling into the "Practical" category. The practicality test by

the teacher obtained a result of 93.75% with the category "Very Practical." This questionnaire aims to determine the responses of teachers and students regarding the appeal of the texture diorama.

The practicality test showed that teachers responded with 93.75% in the "Very Practical" category, while students responded with 86.5% in the "Practical" category. At the evaluation stage, the researcher conducted an effectiveness test on 26 fourth-grade students at SDN Sukun 2 to assess the extent to which the product is effectively used in learning. The assessment of effectiveness was conducted using the N-Gain Score formula and the T-Test as a parametric test. However, because the data is not normally distributed, the researchers used the Wilcoxon Test as a non-parametric alternative to determine the effectiveness level of the product in improving learning outcomes.

The researcher wants to determine whether there is a significant difference between the pretest and posttest scores. Initial analysis was conducted through normality and homogeneity tests. The results show that the posttest data are not normally distributed (significance < 0.05), although the data are homogeneous. Because it did not meet the requirements for the T-Test, the researcher used the non-parametric Wilcoxon Signed Rank Test. The results of the Wilcoxon test showed a significant difference between the pretest and posttest, indicating a positive effect of the treatment given. With a significance value <0.001 which is said o be less than 0.05. this indicates that “Ha” has been accepted. Therefore, it can be concluded that the use of media texture diorama learning provides a good effect to enhance understanding and students’ learning outcomes on the subject of texture in fine arts.

IV. DISCUSSION

At the development stage, the texture diorama (diotek) was created using the ADDIE model, which includes analysis, design, development, implementation, and evaluation. Analysis was conducted on the curriculum, issues, and needs at SDN Sukun 2, which uses the Merdeka Curriculum. The main problem is the lack of focus and understanding among students, which necessitates the use of concrete media. The diorama design is tailored to the characteristics of the students, using strong, safe, and brightly colored natural materials. After undergoing revisions, the diorama was validated by experts in content, language, and media for refinement.According to Ulwiyah (2020), diorama media falls under visual media because it can be seen and is a three-dimensional medium that manipulates real forms, as well as containing learning materials.

The textured diorama media has been validated by subject matter experts, language experts, and media experts to assess its feasibility. The validation results from subject matter experts show a percentage of 93.75% with the category "Very Feasible." This is because the presentation of texture material is systematic, aligns with the learning objectives (LO), and is able to introduce various types of textures in an engaging manner for elementary school students. The textures referred to include real textures that can be physically touched and illusory textures that can only be seen. Validation from language experts achieved a 100% result with the category "Very Suitable," indicating that the texture in the diorama is effective in supporting visual communication. Visual elements such as color, texture, and shape are arranged clearly and are easily understood by students. The techniques used to create textures include frottage, grattage, and collage techniques, which enhance visualization and unify elements in the artwork. Media experts also rated it 100% in the "Very Worthy" category because this media captures students' attention, is easy to use by both teachers and students, and has an attractive design. This diorama media is very helpful in learning because it supports the concept of learning while playing, especially with the open-type diorama. As stated by Sutarini (2024), diorama media has several types, namely closed diorama, open diorama, and foldable diorama.

The textured diorama media shows high practicality based on field test results. The limited field practicality test for students obtained a percentage of 86.2%, while the extensive field test received 86.5%, both of which fall into the "Practical" category. This proves that textured diorama media can enhance students' motivation and enthusiasm for learning in fine arts education. According to Dita's (2022) opinion, learning media functions as a tool for communication and interaction among students, as well as a means of delivering messages, providing knowledge about learning objectives, triggering motivation, presenting information, and encouraging discussion.

The effectiveness of the texture diorama media was measured through the results of the pretest and posttest. The pretest was conducted before the application of the media, with an average student score of 45.38, whereas after the learning using the texture diorama media, the posttest score increased to an average of 82.69. To measure effectiveness, the N-Gain Score calculation was used, resulting in a value of 0.65 in the "medium" category and a percentage of 64.75% in the "Fairly Effective" category. The researcher also conducted a test to compare pretest and posttest scores using the parametric method of the T-Test. However, based on the prerequisite analysis, the data is not normally distributed despite being homogeneous, so the T-Test cannot be used. Therefore, the researcher chose to use the non-parametric Wilcoxon test as a suitable alternative for non-normal data.

The results of the Wilcoxon Signed Ranks Test show that no students experienced a decrease in scores between the pretest and posttest, with 0 students in Negative Ranks, 25 students in Positive Ranks, and 1 student in Ties (unchanged scores). The average score improvement was 13.00 with a total rank of 325.00. The Z value of -4.386 and the Asymp Sig. (2-tailed) value <

0.001 indicate a significant difference between the pretest and posttest scores because the significance value is below 0.05. In conclusion, texture diorama media is effectively used in learning because it can enhance students' understanding of texture material. This media provides concrete examples that can be directly felt through the sense of touch, captures students' attention, and enhances learning outcomes. This is in line with Munadi's opinion in Evitasari (2022), which states that diorama media is a small-scale three-dimensional representation used to depict or explain conditions or phenomena with visual movement.

V. CONCLUSION & RECOMENDATION

Based on the research results, textured diorama media for art education in the 4th grade at SDN Sukun 2 Malang is declared feasible, practical, and effective. Expert validation shows a feasibility percentage of 97.91% (category "Very Feasible"). The practicality of the media according to teachers reached 93.75% ("Very Practical") and according to students 86.5% ("Practical"). The effectiveness of the media based on the N-Gain score of 0.65 ("Moderate") with a percentage increase of 64.75% ("Fairly Effective"). The Wilcoxon test showed a significant difference between the pretest and posttest scores (significance 0.001 < 0.05). Thus, this media can be used for experimental art texture learning in elementary schools. Future researchers are advised to develop this media on a larger scale and enrich the texture examples.

ACKNOWLEDGMENT

The author expresses gratitude to those who have provided assistance and support in the process of writing this article. I would like to express my special thanks to Mrs. Dr. Cicilia Ika Rahayu Nita M.Pd and Mr. Andika Gutama S.Pd. M.Pd as my supervising lecturers, and I would also like to thank the fourth-grade students of SDN Sukun 2 Malang who have provided their time for the research implementation, and especially to my parents who have given their support and affection. I hope this article can provide benefits in the field of education.

REFERENCES

[1] Amalia, M. D., Agustini, F., & Sulianto, J. (2018). Pengembangan Media Diorama Pada Pembelajaran Tematik Terintegrasi Tema Indahnya Negeriku Untuk Meningkatkan Hasil Belajar Siswa. Paedagogia, 20(2), 185. https://doi.org/10.20961/*paedagogia*.v20i2.9850

[2] Azis, A. C. K., & Lubis, S. K. (2023). Pembelajaran Seni Rupa Berdasarkan Perspektif Kurikulum Merdeka Di Sekolah Dasar. Pena Anda: *Jurnal Pendidikan Sekolah Dasar*, 1(1), 10–19. https://doi.org/10.33830/penaanda.v1i1.4948

[3] Dita, P. (2022). Pentingnya Media Pembelajaran dalam Meningkatkan Prestasi Belajar. *Early Childhood Islamic Education Journal*, 3(01), 73–85. https://doi.org/10.58176/eciejournal.v3i01.679

[4] Evitasari, A. D., & Aulia, M. S. (2022). Media Diorama dan Keaktifan Belajar Peserta Didik dalam Pembelajaran IPA. *Jurnal Riset Pendidikan Dasar (JRPD), 3(1),* 1.https://doi.org/10.30595/jrpd.v3i1.11013

[5] Febrinita, F. (2022). Efektivitas Penggunaan Modul Terhadap Hasil Belajar Matematika Komputasi Pada Mahasiswa Teknik Informatika. *De Fermat: Jurnal Pendidikan Matematika, 5(1),* 1–9. http://jurnal.pmat.uniba bpn.ac.id/index.php/DEFERMAT/article/view/269%0Ahttps://jurnal.pmat.uniba bpn.ac.id/index.php/DEFERMAT/article/download/269/61

[6] Handayani. (2020). Bab Iii Metode Penelitian. *Suparyanto Dan Rosad (2015*, *5*(3), 248–253.

[7] Hariati, F. (2019). Penggunaan Media Untuk Mengatasi Hasil Belajar IPS Tema Udara Bersih Bagi Kesehatan Pada Siswa Kelas V B Di SDN Menanggal-Mojokerto. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *7*(7), 3861–3875. https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal penelitian-pgsd/article/view/32014

[8] Iraqi, H. S., Lena, M. S., Sulastri, J., & Reviana, F. R. (2023). Pembelajaran Seni Rupa dalam Penerapan Kurikulum Merdeka https://doi.org/10.58578/yasin.v3i4.1283 di Sekolah Dasar. Yasin, 3(4), 640–649.

[9] Meianti, A. (2018). Pengembangan Media Pembelajaran Berbasis Audio Visual Powtoon pada Kompetensi Dasar Menerapkan Promosi Produk Kelas X Pemasaran SMK Negeri Mojoagung. *Jurnal Pendidikan Tata Niaga (JPTN), 06(03). 109-144. https*://ejournal.unesa.ac.id/index.php/jptn/article/view/25565/23439

[10] Nate, Y. R. (2022). Pengembangan Media Diorama Pada Pembelajaran IPA Kelas V MIN 11 Aceh Tengah. Skripsi, 1–107.

[11] Oktamia Anggraini Putri. (2022). Jurnal Pendidikan dan Konseling_Pembelajaran di Sekolah Dasar. Jurnal Pendidikan Dan Konseling, 4(20), 1349–1358.

[12] Rika Widianita, D. (2023). PENGEMBANGAN MEDIA PEMBELAJARAN DIORAMA MATA PELAJARAN IPS UNTUK MENINGKATKAN ANALISIS PERAN EKONOMI DALAM KEHIDUPAN SOSIAL SISWA KELAS V SDN MRICAN 1. AT-TAWASSUTH: *Jurnal Ekonomi Islam, VIII(I),* 1–19.

[13] Riyana, C., Pendahuluan, A., Sadiman, M. A. S., & Pembelajaran, K. (n.d.). *K O M P O N E N - K O M P O N E N*. 1–63.

[14] Sutarini, D. A. (2024). Pengembangan Media Diorama Tiga Dimensi Berbasis Kearifan Lokal Pada Pembelajaran Tematik Kelas IV Sekolah Dasar. *Jurnal Penelitian Pendidikan, 03*(2), 113–124.

[15] Ulwiyah, N., & Mumayizah, N. (2020). Implementasi Metode Jigsaw dan Media Diorama Kelapa untuk Meningkatkan Hasil Belajar Siswa MI pada Mata Pelajaran Tematik. JPDI: *Jurnal Pendidikan Dasar Islam, 2*(1), 63–78. journal.unipdu.ac.id/index.php/JPDI/index

[16] Ummah, M. S. (2019). Kisi-kisi Angket Penilaian Kelayakan Lembar Kerja Peserta Didik Berbasis Multi Representasi. *Sustainability (Switzerland)*, 11(1), 1–14.http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng 8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005% 0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUS AT_STRATEGI_MELESTARI

[17] Wahana Sari, W., Alrasi, F., Marlena, R., Astirani, P., & Kaputra, S. (2023). Media Pembelajaran Dalam Perspektif Pendidikan Islam. *Tazakka: Jurnal Pendidikan Dan Keislaman, 1*(02), 82–92. https://doi.org/10.24036/tazakka.v1i02.15