



EXPLORATION OF ILLUSTRATION STYLE SELECTION IN EDUCATIONAL MEDIA FOR AN ENCYCLOPEDIA BOOK OF PREHISTORIC MAMMALS FOR CHILDREN AGED 13–15

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Abstract

This study aims to explore the selection of illustration styles (artstyles) in designing educational media in the form of a pop-up encyclopedia of prehistoric mammals for children aged 13–15 years. A qualitative descriptive method was used through questionnaires (54 respondents) and group interviews (5 students). The results show that the majority of respondents (53.7%) prefer a semi-realistic illustration style. Interviews also indicate a preference for styles that are not rigid but remain clear. Based on these findings, the exploration focused on a semi-realistic style using Elasmotherium as the study object. The results indicate that color and texture techniques influence visual characteristics. A semi-realistic style with a watercolor approach was selected for its natural and engaging appearance while maintaining clarity. In conclusion, appropriate illustration style selection enhances visual appeal and supports learning comprehension.

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INTRODUCTION

Science learning plays an important role in improving students' critical thinking skills and conceptual understanding (Husnul Fuadi et al., 2020). However, in practice, the delivery of science material is still dominated by lengthy text and one-way instruction, making it less effective in attracting learning interest, especially among adolescents (Tillah & Subekti, 2025).

Learning media that are visually unappealing can lead to low student engagement in the learning process. Therefore, there is a need for learning media that not only deliver information but also capture attention and facilitate understanding through a visual approach (Yanto et al., 2023). A visual approach can be implemented through the use of illustrations to explain a subject matter.

The term illustration originates from the Latin *ilustrare*, which means appearance, illumination, glory, and vivid depiction. In general, illustration can be defined as the art of drawing that aims to clarify, explain, and reinforce the content of a script or text so that it becomes easier to understand (Prihatmoko, 2021).

One important aspect of illustration is visual style. In general, visual styles in educational media for adolescents can be classified into several categories, namely realistic, abstract and semi-abstract, and stylized styles (Sularjo et al., 2026).

The realistic style is generally used to convey information that requires a high level of accuracy, such as in science and geography learning. Meanwhile, abstract and semi-abstract styles are more commonly used to represent complex visual concepts, such as maps or artistic visualizations (Sularjo et al., 2026).

An inappropriate choice of illustration style can make information difficult to understand or less engaging for the audience, whereas a style that aligns with the characteristics of the target audience can increase interest and support the comprehension process.

Based on these issues, it is necessary to explore the selection of illustration styles (artstyles) in the design of educational media in order to effectively convey information while also engaging the audience.

The selection of this visual style is implemented in the design process in the form of a

pop-up encyclopedia book titled "Menjelajahi Dunia Mamalia Prasejarah" that presents prehistoric mammals as a visual educational medium. Prehistoric mammals are a group of animals that lived in the past and possess unique characteristics that make them interesting to study.

Based on this background, this study aims to explore and determine an illustration style that corresponds to the visual preferences and informational needs of audiences aged 13–15 years for an educational encyclopedia of prehistoric mammals. Specifically, the study examines audience preferences toward several illustration styles and translates the results into visual exploration to identify an approach that balances visual attractiveness with clarity in representing the characteristics of prehistoric mammals.

METHODS

This study employs a qualitative method with a descriptive approach, aiming to analyze the selection of visual illustration styles in the design of educational media. This method is used to understand the visual needs of the audience and to determine the appropriate illustration style based on the data obtained.

The questionnaire presented respondents with alternative illustration styles representing cartoon, realistic, and semi-realistic approaches. Respondents were asked to identify the visual style they preferred for use in a prehistoric mammal encyclopedia. The questionnaire was used to identify the distribution of audience preferences as an initial basis for determining the visual direction to be explored further.

Data collection was conducted through several techniques, namely questionnaires and interviews. The questionnaire was administered to 54 respondents aged 13–15 years to identify visual preferences and learning needs. In addition, a group interview was conducted with five students aged 13–15 years at SMP Khadijah 2 on December 15, 2025, in an offline setting to gain deeper insights into the audience's perceptions of preferred illustration styles.

The group interview was conducted to further explore the considerations underlying the participants' visual preferences identified through

the questionnaire. The discussion focused on participants' perceptions of illustration clarity, level of realism, visual attractiveness, and their expectations regarding illustrations of prehistoric mammals. The interview data were used to provide qualitative explanations for the preference patterns identified through the questionnaire.

Respondents aged 13–15 years were selected because they represent the primary target audience of the prehistoric mammal encyclopedia developed in this study. The involvement of the target audience was intended to ensure that the selection of illustration styles was not based solely on the designer's subjective considerations but also reflected the visual preferences of prospective users.

The questionnaire and interview data were analyzed descriptively in several stages. First, questionnaire responses were grouped according to the selected illustration categories—cartoon, realistic, and semi-realistic—and their frequency and percentage distributions were calculated to identify the dominant visual preference. Second, the group interview responses were organized according to recurring considerations concerning visual clarity, rigidity, attractiveness, and the recognizability of animal characteristics. Third, the quantitative preference patterns and qualitative interview findings were compared to formulate visual criteria for the illustration exploration. These criteria were subsequently translated into design considerations involving the degree of realism, line treatment, color, texture, and level of detail. The resulting visual alternatives were then compared against these criteria to determine the illustration approach most consistent with the audience analysis. The results of this analysis were used as the basis for determining the illustration style that best aligns with the characteristics of the audience.

Following the audience analysis, visual exploration was conducted to translate the identified preferences into illustration alternatives. *Elasmotherium* was used as the study object because its distinctive morphological features, particularly its prominent horn and body structure, provide recognizable visual characteristics for evaluating different treatments. The exploration focused on variations in line

treatment, color, texture, level of detail, and degree of realism within the semi-realistic approach. The resulting alternatives were compared based on the visual criteria derived from the questionnaire and group interview findings, particularly clarity of form, recognizability of animal characteristics, visual attractiveness, and the avoidance of an overly rigid appearance. The selected approach was subsequently refined into the final illustration style for the educational media.



Figure 1. Questionnaire Questions

RESULTS AND DISCUSSION

Based on the questionnaire results, it was found that 53.7% of respondents preferred a semi-realistic illustration style, 40.7% preferred a realistic style, and 5.6% choose a cartoon style.

The dominance of semi-realistic and realistic styles indicates that respondents tend to prefer illustrations that retain recognizable anatomical characteristics rather than highly simplified or exaggerated forms. This tendency is particularly relevant to educational media on prehistoric mammals because the illustrations are expected to perform two functions simultaneously: providing visual information about animals that can no longer be observed directly and maintaining sufficient visual appeal for adolescent audiences. The relatively small difference between semi-realistic (53.7%) and realistic (40.7%) preferences also suggests that representational clarity remains important to respondents. However, the higher preference for semi-realistic illustrations indicates that visual accuracy does not necessarily require a fully realistic representation. Instead, simplification can be applied as long as the essential

characteristics of the animal remain identifiable. Therefore, the questionnaire results should be understood not merely as a preference for a particular aesthetic style, but as an indication of the audience's need for a balance between representational clarity and visual engagement. (Kakusho et al., 2019).

This indicates that the majority of the audience prefers a visual style that tends to be semi-realistic [figure 3].

The results of the group interviews show that respondents prefer an illustration style that is not too rigid but still able to clearly depict the characteristics of the animals. Therefore, the semi-realistic style is considered the most suitable approach to meet the needs of the audience.

The interview findings reinforce the questionnaire results by revealing the visual considerations underlying the respondents' preferences. The expression "not too rigid" indicates a preference for illustrations that avoid the static and highly detailed impression of fully realistic representation, while the expectation that animal characteristics remain clearly visible demonstrates the continued importance of representational accuracy. In educational illustration, these two requirements should not be treated as contradictory. Visual simplification can reduce unnecessary details and make an image more accessible, while maintaining distinctive anatomical features preserves the informational function of the illustration. In the context of prehistoric mammals, this balance is particularly important because the illustration becomes one of the primary means through which audiences construct a visual understanding of animals they have never encountered directly.

Based on these findings, the design process was focused on exploring illustration styles within the semi-realistic category. The exploration was carried out using Elasmotherium as the visual study object. Elasmotherium was selected as the visual study object due to its distinctive features, such as its large horn and unique body structure, making it suitable for exploring variations in illustration styles.

The results of the exploration show that each variation has distinct visual characteristics. These differences indicate that coloring techniques and texture have a significant influence

on the illustration style, even within the same stylistic category.



Figure 2. Elasmotherium
Sumber : a-z-animal.com



Figure 3. Questionnaire results

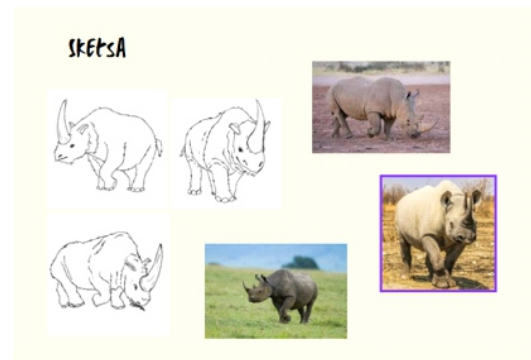


Figure 4. Sketch of Elasmotherium

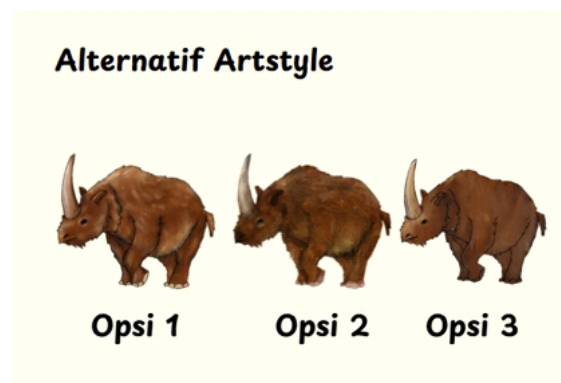


Figure 5. Exploration of illustration styles

The exploration indicates that variations within a semi-realistic style can produce different levels of visual clarity and expressive quality even when they depict the same object. Differences in line treatment, color transitions, surface texture, and the degree of detail affect how the animal is visually perceived. A treatment with excessive detail tends to move the image toward realistic representation and may create a more rigid visual impression, whereas excessive simplification risks reducing morphological information.

The selected approach therefore seeks a middle position: preserving distinctive anatomical features while reducing secondary details and introducing softer color transitions and textures. This balance corresponds with the audience findings, which indicate a preference for illustrations that remain clear but are visually less rigid. Thus, the exploration stage functions as a process of translating audience preferences into concrete visual decisions rather than merely producing stylistic alternatives.

The selection of *Elasmotherium* also provides an appropriate test for evaluating the effectiveness of the selected illustration style. Its prominent horn, massive body proportions, and rhinoceros-like morphology provide distinctive visual markers that need to remain recognizable after stylization. Therefore, the exploration does not merely examine which illustration appears aesthetically attractive, but also how far visual simplification can be applied without eliminating the morphological characteristics that support object recognition. In this sense, *Elasmotherium* functions as a visual case through which the balance between scientific recognizability and illustrative stylization can be examined.



Figure 6. Final illustration style

Based on the comparison results, a semi-realistic illustration style with a watercolor approach was selected. This choice was based on its ability to create visuals that are more lively, less rigid, and aligned with the audience's preferences.

The semi-realistic style with a watercolor approach is applied while maintaining the main characteristics of *Elasmotherium*, such as its body shape and horn, but with simplified details to make it easier to understand.

The use of color is carried out through soft gradient techniques and textures resembling watercolor to create a more dynamic and less rigid visual impression. This aims to enhance audience engagement in understanding the illustrations. Pendekatan watercolor It creates an organic and natural impression, making it suitable for depicting prehistoric mammals. In addition, this style is able to enhance visual appeal without reducing the clarity of form.

From a visual communication perspective, the watercolor approach supports the semi-realistic style because it allows gradual transitions of color and texture while avoiding the photographic rigidity of fully realistic representation. At the same time, the preservation of the animal's silhouette, body proportions, and distinctive anatomical features maintains its recognizability as an educational object. The final illustration therefore represents a negotiation between two visual requirements identified through the analysis: informational clarity and audience engagement. This demonstrates that illustration style in educational media should not be determined solely by aesthetic preference, but through consideration of how visual treatment supports the communication of subject matter to a specific audience.

Overall, the analysis results directly address the research objective by establishing a sequential relationship between audience preference, visual exploration, and final illustration selection. The questionnaire identified semi-realistic illustration as the dominant preference among respondents, while the group interviews clarified that this preference was associated with the expectation of a visual style that is less rigid but still clearly represents the characteristics of the animals. These findings subsequently became the criteria for exploring line, color, texture, and level of detail

using Elasmotherium as the visual study object. The resulting semi-realistic watercolor approach was selected because it most closely accommodates these criteria by maintaining recognizable morphological features while producing a softer and more engaging visual impression. Therefore, the final visual decision is not merely an aesthetic choice but an outcome derived from the analysis of audience needs, thereby fulfilling the study's objective of identifying an appropriate illustration style for educational media aimed at children aged 13–15 years.

CONCLUSION

Based on the research findings, it can be concluded that visual illustration style plays an important role in determining the effectiveness of visual information delivery in educational media. The results of the questionnaires and interviews indicate that the majority of the audience aged 13–15 tend to prefer a semi-realistic illustration style that combines various visual elements.

The exploration of illustration style variations shows that differences in visual techniques, such as line, color, and texture, can influence audience understanding of the illustrations. Among the alternatives developed, the semi-realistic style with a watercolor approach was selected because it is able to produce a more natural and less rigid appearance while still maintaining the clarity of the object's form.

Therefore, the appropriate selection of artstyle, particularly through a semi-realistic approach with watercolor techniques, can enhance visual appeal while also supporting the process of information comprehension. This demonstrates that illustration style functions not only as an aesthetic element but also as an effective visual communication medium in supporting learning.

REFERENCES

- Husnul Fuadi, Annisa Zikri Robbia, Jamaluddin, A. W. J. (2020). ANALISIS FAKTOR PENYEBAB RENDAHNYA KEMAMPUAN LITERASI SAINS PESERTA DIDIK. *Jurnal Ilmiah Profesi Pendidikan*, 5 (2) , 1 0 8 – 1 1 6 . <https://jipp.unram.ac.id/index.php/jipp/article/view/122/110>.
- Prihatmoko, S. (2021). Kreasi Menggambar Ilustrasi dengan Ilustrator.
- Sularjo, A. A., Ciputra, U., Kunci, K., Visual, G., Edukasi, K., Remaja, K., & Visual, P. (2026). Kajian gaya visual pada komik edukasi WHY ? Seri China dalam mendukung keterlibatan dan pemahaman remaja A visual study of the educational comic WHY ? China Series in. 1(2), 115–128.
- Tillah, N. F., & Subekti, H. (2025). INDIKATOR DAN LEVEL LITERASI SAINS Universitas Negeri Surabaya , Indonesia * Corresponding author : hasansubekti@unesa.ac.id *Edusaintek : Jurnal Pendidikan , Sains dan Teknologi Vol . 12 (1) 2025 | 137 PENDAHULUAN Ilmu Pengetahuan Alam merupakan ilmu ya. Edusaintek: Jurnal Pendidikan, Sains dan Teknologi, 12(1), 137–154.*
- Yanto, N., GH, M., & Zubair, S. (2023). The Effect of Pop UBook Media in Science Learning: A Literature Review. *EduLine: Journal of Education and Learning Innovation*, 3 (2), 214–220. <https://doi.org/10.35877/454ri.eduline1772>
- Akhmad, R., Sugandi, D., Nandi, N., & Rahmawati. (2018). Infographic Design as Visualization of Geography Learning Media. *IOP Conference Series: Earth and Environmental Science*, 145, 012011. <https://doi.org/10.1088/1755-1315/145/1/012011>.
- Kakusho, K., Takase, F., Murakami, M., Lin, W., & Yueh, H.-P. (2019). How Learners with Different Cognitive Styles Read Learning Materials with Text and Pictures: A Gaze Analysis (pp. 435–445). https://doi.org/10.1007/978-3-030-22580-3_32.
- Lee, C.-R. (2026). Exploring students' aesthetic imagery cognition in digital illustration styles: implications for art education. *Cogent Education*, 13(1). <https://doi.org/10.1080/2331186X.2026.2639782>.