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Implementation of Guided Inquiry Learning Method in Creating Color Composition in Middle School Students

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ABSTRACT

The background of this research stems from the need for a more active and student-centered learning approach to increase engagement, creativity, and understanding of color concepts, especially primary, secondary, and tertiary colors. This study aims to evaluate the application of the guided inquiry learning method in creating color compositions in the Arts and Culture (Fine Arts) subject in junior high schools in Takalar Regency. The methodology used in this study is an evaluative method with a qualitative approach. Data were collected through observation, interviews, and document analysis. The results of the study indicate that the application of the guided inquiry method significantly improves students' understanding of the concept of color and their ability to create color compositions independently and creatively. In addition, this method also encourages the students' active involvement, teamwork, and critical thinking skills. Although it requires more time and effective classroom management, this method has proven relevant and effective for application in fine arts learning at the junior high school level.

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1. INTRODUCTION

In middle schools, learning about color composition plays a crucial role in fostering students' creativity, aesthetic sense, and critical thinking skills. Learning about color composition plays a crucial role in developing students' creativity, imagination, and critical thinking skills (Kurniawan, 2025). Learning about color compositions is not simply about creating them.

Color composition is an effective tool for developing various aspects of student development, from cognitive to affective to psychomotor (Billah et al., 2024). Through these activities, students can explore color theory. These skills are not only crucial for academic success but also for their future social lives. However, in practice, color composition learning is often dominated by conventional learning methods, which tend to be passive because they are teacher-centered and therefore do not encourage active student participation. For example, when teachers employ conventional learning

methods such as lectures and question-and-answer sessions, the learning process tends to be monotonous (Abdel Meguid & Collins, 2017; González, 2018). This makes it easier for students to lose focus and become distracted by things outside the lesson. In the question-and-answer method, many students feel hesitant, afraid to answer, or lacking in confidence (Irianto & Timang, 2024). As a result, they tend to memorize the material rather than understand it deeply, as they lack the opportunity to directly experience or prove their answers or hypotheses.

The right learning method plays a crucial role in helping students understand the material well (Kustyarini et al., 2020). One approach that can be used is the guided inquiry method. This method emphasizes critical and investigative thinking processes, where students are encouraged to discover key concepts for themselves through teacher guidance (Dorfman et al., 2020; Lee et al., 2023; Ho et al., 2023). Guided inquiry provides opportunities for students to actively explore, observe, and develop knowledge through a series of questions and challenges posed by the teacher (Price et al., 2021; Al Mamun & Lawrie, 2023). In the context of learning to create color compositions, this method can help students develop skills in detailed observation, analyzing shapes, and applying appropriate color composition techniques.

One middle school in Takalar Regency, public middle school 6 Polongbangkeng Utara, has significant potential for developing color composition learning. However, initial observations revealed challenges in the color composition learning process, particularly in the color composition material. Students tend to be passive, dependent on teacher instructions, and lack the courage to experiment with color composition. Therefore, the implementation of the guided inquiry method is expected to provide a solution to improve students' understanding of the color composition material while simultaneously developing their critical and creative thinking skills.

To address these issues, a more innovative, student-centered learning approach is needed. One attractive alternative is the guided inquiry learning method (Barthlow & Watson, 2014; FitzGerald & Garrison, 2016; Lazonder & Harmsen, 2016). This method encourages students to actively explore, ask questions, and find answers to problems related to the color composition material. This way, students not only passively receive information but also engage directly in the learning process.

In this study, the guided inquiry method will be applied to learning about color composition to determine the impact of the method based on supporting factor data. The findings of this study can serve as a reference for teachers, schools, and policymakers in designing more effective and contemporary color composition learning programs. Furthermore, this research is also expected to provide a deeper understanding of the potential of guided inquiry methods in improving the quality of color composition learning.

Based on the author's description and preliminary study, the objectives of this study are: (1) To determine how guided inquiry learning methods are applied to the topic of color composition creation in junior high schools in Takalar Regency. (2) To determine the effectiveness of guided inquiry learning methods in color composition creation in junior high schools in Takalar Regency.

2. METHOD

The research type used is evaluative research. Evaluative research is essentially applied research, but its objectives are different. This evaluative research is intended to measure the success of a particular program/plan, product, or activity. This research is intended to evaluate the success, benefits, usefulness, feasibility, and contribution of a program/activity plan implemented by a particular unit/institution. Evaluative research can be designed to answer questions, test, or prove hypotheses. Therefore, it can be concluded that evaluative research in this study aims to design, refine, and test the implementation of an educational practice. Moreover, the design of evaluative research includes assessing the effectiveness and advantages of activities. This article presents the research model in Figure 1.

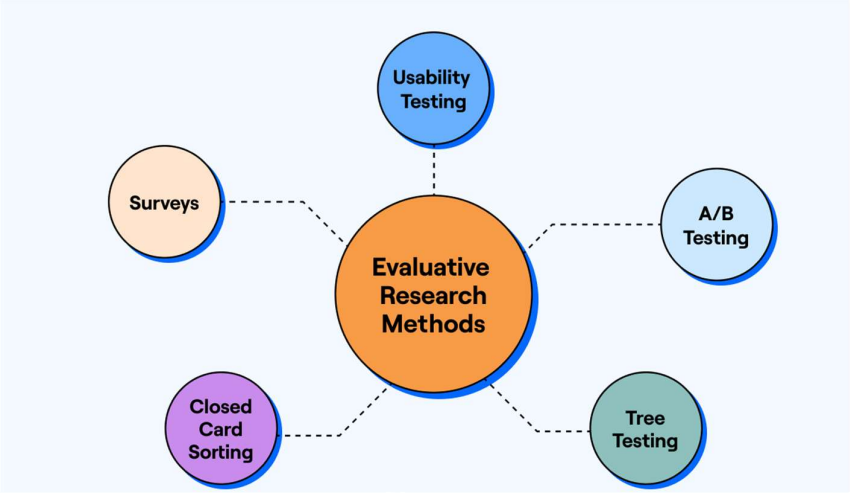

Figure 1. Evaluative Research Model

Therefore, the main objective of this evaluative research is to provide information related to the educational programs that have been implemented. This research was carried out at middle school 6 Polongbangkeng Utara as the research location because the researcher is a teacher at the school. Data Collection Techniques used were: (a) The researcher analyzed documents such as lesson plans, class journals, teacher notes, or student portfolios. Document analysis helps in understanding the planning, implementation, and evaluation of the guided inquiry method in learning to create color compositions. (b) Classroom Observation: The researcher directly watchedthe learning process in the color composition creation class that applies the guided inquiry method. Observations include aspects such as interactions between teachers and students, student activity in learning, use of learning materials, and the overall classroom atmosphere. (c) Interviews with teachers: conducted to obtain information after carrying out learning activities. Data was obtained by interviewing one of the arts and culture teachers at the school. Furthermore, the following research instruments can be used to collect data:

1. Document Analysis Guide: This instrument is used to analyze documents such as lesson plans, class journals, teacher notes, or student portfolios. Document analysis will help understand how the guided inquiry method is planned,

implemented, and evaluated by teachers and its impact on student learning outcomes.

2. Classroom Observation Checklist: This instrument is used to conduct direct observations of the learning process in a color composition class that applies the guided inquiry method. The checklist will cover aspects such as interactions between teachers and students, the use of learning materials, the level of student engagement, and the effectiveness of the guided inquiry method.
3. Interview Guide: This instrument is used to conduct interviews with color composition teachers who apply the guided inquiry learning method. The interview guide will contain structured questions designed to explore teachers' experiences in designing and implementing lessons, challenges faced, and their perceptions of the effectiveness of the guided inquiry method.

Data collected from interviews, observations, and document analysis will be analyzed qualitatively. Data analysis was conducted by summarizing, categorizing, and interpreting the information obtained to gain an in-depth understanding of the problem formulation of the guided inquiry method in terms of student learning outcomes. The results of the data analysis were interpreted by referring to relevant theories on learning to create color compositions and the use of the guided inquiry method. Researchers identified key findings and understood the implications of the research results for learning practices.

3. RESULTS AND DISCUSSION

Results

Implementation of the Guided Inquiry Learning Method in Creating Color Compositions in Middle Schools

The application of the guided inquiry learning method in Arts and Culture lessons, particularly in the topic of creating color compositions, has been proven to improve student skills and encourage their active participation during the learning process. Based on observations and data analysis obtained during two learning cycles, significant improvements were observed in both the cognitive and psychomotor aspects of students. This study aimed to analyze the effectiveness of the guided inquiry learning model in improving student learning outcomes in fine arts, specifically in recognizing and creating colors (primary, secondary, tertiary, and neutral) through hands-on activities.

The guided inquiry model in this learning was systematically designed with the following stages: orientation, problem formulation, hypothesis formulation, experimentation (trial), data collection and analysis, and drawing conclusions. The main activity in the experiment was students practicing leaf printing using a mixture of three primary colors to produce a new color composition.

The lesson plan includes discussion and question-and-answer methods, coloring media (three primary colors of watercolor), and collaborative learning strategies focused on active student involvement. Achievement indicators for this activity include:

a) Ability to recognize types of colors.

b) Ability to create new colors from mixing primary colors.

c) Ability to analyze experimental results and draw conclusions independently.

Based on observations of the process and evaluation of the results, it was found that most students experienced an increase in their understanding of color concepts, as indicated by:

a) Active participation in the experiment.

b) Ability to answer oral and written questions correctly.

c) Creative and varied leaf prints.

The guided inquiry learning model for primary, secondary, and tertiary color composition is implemented through a series of activities designed to encourage students to think critically and actively experiment. The activity begins with the teacher presenting provocative questions and visual images that pique students' curiosity about color. In the context of fine arts, color composition refers to the arrangement of colors in a work of art to create harmony, contrast, harmony, or a specific visual effect. Students are guided not only to identify colors but also to understand how to arrange and combine them aesthetically.

For example, in the leaf-printing activity described in this learning implementation, students not only mix colors to create secondary and tertiary colors but also arrange them in visually appealing patterns or compositions. This activity fosters an understanding of the visual aspects of fine art, such as harmony, balance, and rhythm in artwork. Next, students are encouraged to identify primary colors (red, blue, and yellow) and formulate hypotheses about how these colors can be combined to form secondary and tertiary colors. In the experimental phase, students use watercolors to mix primary colors and create new colors based on their hypotheses. This process is further developed through leaf printing activities with the mixed colors, allowing students to directly observe the results of their color combinations.

The teacher guides each group to record, analyze, and draw conclusions from their experimental results. The results of the exploration are then presented to the group, allowing students to practice communication and collaboration and evaluate their understanding of color concepts. Through this guided inquiry approach, learning focuses not only on the final product but also on the process of thinking and exploration, which develops students' creativity, logic, and social skills.

Student Activities and Responses

Observations of Student Engagement During Learning

During the learning process using the guided inquiry model, student engagement was observed through several key indicators, namely: active participation in discussions, participation in experiments, ability to work collaboratively in groups, and enthusiasm when expressing opinions or experimental results.

Figure 2. Student Atmosphere When Learning with the Guided Inquiry Method

The results of this observation indicate that the guided inquiry approach can increase students' active participation and self-confidence because they are directly involved in the process of discovering concepts, rather than simply receiving information from the teacher.

Student Responses to the Guided Inquiry Learning Process

Students' responses to this learning model were generally positive. They enjoyed the learning activities because they were not monotonous, but rather more interactive, fun, and encouraged them to think for themselves. Examples of student responses based on interviews:

1) "*I like being able to mix my own colors and see the results. It turns out there are many different colors, not just three*," said a student named F.
2) "*I enjoy being able to work in groups; it makes learning easier because we help each other*," said another student named S.
3) Several students also stated that they understood the color material better because they learned through hands-on practice, rather than simply reading or taking notes.

Furthermore, activities such as printing leaves with mixed paint were considered engaging and stimulated creativity. They felt like they were "experimenting" rather than simply following the teacher's instructions. However, some students initially felt confused when formulating a problem or hypothesis. After gradual guidance from the teacher, these students were eventually able to follow the learning flow and contribute to their group.

Student Learning Outcomes Using Guided Inquiry Learning

Table 1 below presents individual student scores before and after the implementation of the guided inquiry learning model.

Table 1. Student Learning Outcomes

No	Students	Initial Value	Final Score	Information
1	FD	70	82	Increase
2	MA	70	74	Slightly Increased
3	MH	74	84	Increase
4	MR	68	76	Increase
5	NU	68	78	Increase

No	Students	Initial Value	Final Score	Information
6	SA	72	82	Increase
7	SN	80	88	Increase
8	SI	70	80	Increase
9	SY	70	84	Increase
10	TF	68	74	Increase

Based on the data, the average student score before the implementation of guided inquiry learning was 71, while after the implementation of the model, it increased to 80.2. This represents an average increase of 9.2 points. The results of the study indicate that the guided inquiry learning model has a positive impact on student learning outcomes. The increase in average scores indicates that this approach is able to improve students' conceptual understanding, not just memorization but rather in-depth conceptual understanding. Furthermore, observations during the learning process indicate that: 1) Student engagement increased during practice. 2) Students demonstrated greater creativity when solving problems. 3) Independent learning was encouraged, although active teacher guidance was still required.

Examples of Student Work

In a guided inquiry learning process, students were asked to experiment with mixing the three primary colors, red, blue, and yellow, in varying proportions to produce secondary and tertiary colors. The results of this activity were presented in artworks consisting of leaf stamps with mixed color compositions, printed on drawing paper. For example, one student created a gradient color composition from orange to brown by mixing red and yellow in varying proportions, then adding a small amount of blue to reduce the brightness. The leaves were dipped in the mixed paint and repeatedly printed onto the paper to form decorative patterns. The resulting artwork demonstrated an exploration of secondary colors (orange, green, and purple) and tertiary colors (such as olive, maroon, or dark brown) in visually appealing forms.

Another work included a collage of mixed colors that formed symmetrical patterns using leaves as the print medium. Several students creatively arranged the leaf prints into circular, zigzag, or abstract patterns, demonstrating an understanding of aesthetics and the principles of unity and balance in fine art. The following is one of the students' works presented in Figure 3 and Figure 4.

Figure 3. Student Work Results Before and After Guided Inquiry Learning

Figure 4. Application of the Guided Inquiry Learning Method in Creating Color Compositions

Discussion

This study was conducted to determine the extent to which the guided inquiry learning method can improve students' ability to create color compositions in arts and culture subjects in seventh-grade junior high schools. The study was conducted at public middle school 6 Polongbangkeng Utara, Takalar Regency, with 20 seventh-grade students as subjects. In general, this school has adequate fine arts learning facilities, such as an art room, painting equipment, and presentation media, thus supporting the implementation of visual exploration-based learning such as guided inquiry.

Learning was then conducted in two cycles using a guided inquiry approach. In the first cycle, students were introduced to basic color theory through direct observation and experimentation using poster paint. The teacher provided guidance in the form of guiding questions such as "*What happens if blue is mixed with yellow*?" or "*What color appears if red and green are combined*?" Students actively recorded the results of their color explorations and began to apply them to their work. Following the learning process, the students' work was assessed.

Based on reflections from the first cycle, in the second cycle, the teacher provided stimuli in the form of works by artists using contrasting and analogous color compositions. The theme this time was "*Atmosphere*," where students were asked to create works with specific color expressions, such as a bright morning, a quiet night, or autumn. The teacher continued to provide guidance, but students were encouraged to make creative decisions independently. The students' work demonstrated significant improvements in color selection, courage to explore unconventional colors, and color alignment with the theme. The average student score rose to 82.3, and 78% of students were able to explain the reasons for their color choices in their work.

This improvement in student performance demonstrates the effectiveness of the guided inquiry method in encouraging deeper exploration and understanding of color. Students not only memorized color theory but also truly experienced and understood how color works visually and emotionally in a work of art. These results align with Bruner's theory of discovery learning, which facilitates student learning (Rahman, 2017; Wulandari et al., 2018; Ozdem-Yilmaz & Bilican, 2025). In addition to improving skill

scores, learning using the guided inquiry method also positively impacted student engagement and creativity (Oktavia, 2019).

During the learning process, students appeared more enthusiastic about asking questions, experimenting with various color combinations, and discussing the color effects they discovered. Presenting their work at the end of each cycle also helped students practice their communication skills and self-reflect on their creative process. Student grades also showed improvement, strengthening evidence that the implementation of guided inquiry positively impacts learning outcomes. Assessment was conducted through attitude observations, knowledge tests, and performance tests.

In the initial stage (pre-test), most students still struggled to arrange color combinations aesthetically. The colors used tended to be random and did not reflect an understanding of the principles of harmony or color contrast. The average student score in the pretest was 64.8, which falls into the "adequate" category.

After the implementation of the guided inquiry method in the first cycle, the average score increased to 72.5. During this process, students began to recognize the characteristics of primary, secondary, and tertiary colors through simple experiments such as mixing colors or comparing the visual effects of certain combinations. The teacher facilitated this activity through guiding questions that encouraged students to investigate and draw their own conclusions. The teacher's role as a facilitator was crucial in fostering students' independent thinking.

Further improvement was seen in the second cycle, where the average student score reached 82.3. At this stage, students were not only able to apply the principles of color composition but also began to connect color choices to specific themes or moods in their work. Students demonstrated courage in experimenting, both in terms of technique and visual ideas. This aligns with the principles of guided inquiry learning, which positions students as active subjects in the knowledge-seeking process, with the teacher acting as a companion who provides direction without stifling creativity.

In addition to improving grades, learning using the guided inquiry method also had a positive impact on student engagement in class. Initially, only around 35% of students actively asked questions or participated in discussions, but by the end of the second cycle, this percentage had increased to 85%. Students appeared more confident in expressing their opinions, exchanging ideas, and reflecting on their creative process with their peers. This fact demonstrates that an interactive, exploration-based classroom atmosphere can significantly increase student motivation (Ding et al., 2023). Additionally, an open learning environment that values the creative process allows students to develop their aesthetic potential more optimally (Davies et al., 2013; Swanzy-Impraim et al., 2023).

These findings align with several previous studies showing that the guided inquiry approach is effective in improving critical thinking, problem-solving, and conceptual mastery in both science and art learning (Sokołowska, 2018; Tornee et al., 2019; Suardana et al., 2019; Ampartzaki, 2023). Therefore, it can be concluded that the guided inquiry method is relevant for arts and culture learning, particularly in materials requiring visual exploration and interpretation, such as creating color compositions. The

integration of theory, practice, and independent discovery makes learning more meaningful and has a long-term impact on students' cognitive and creative development.

The findings of this study imply that the guided inquiry method is highly suitable for practical arts and culture learning, particularly in creative and exploratory materials such as creating color compositions. Teachers are advised to use this approach more frequently to provide students with space to experiment, think critically, and develop their own visual styles. Furthermore, schools should provide more adequate facilities and infrastructure to support this practice-based learning and visual exploration.

This study aims to determine the effect of implementing the guided inquiry learning model on improving student learning outcomes. The data obtained are the result of a comparison of scores before and after the implementation of the guided inquiry learning model in practical exams. Despite challenges, the guided inquiry model has proven effective in improving student learning outcomes. Therefore, it is recommended to continue developing supporting facilities for practical work and providing training to teachers to optimize this model in teaching. Student engagement and responses indicate that the guided inquiry model is effective in encouraging active, exploratory, and meaningful learning, particularly in fine arts lessons that require conceptual understanding and hands-on practice. This model also strengthens collaboration among students and builds confidence in expressing ideas.

This model has a positive influence on improving student understanding and creativity (Sokołowska, 2018; Lu et al., 2021; Wen et al., 2023). The application of guided inquiry allows students to actively engage in the learning process through direct exploration of primary, secondary, and tertiary colors. The learning process, designed with an inquiry approach, provides space for students to develop curiosity, critical thinking, and the ability to discover knowledge independently. Therefore, it is hoped that the findings of this study can make a tangible contribution to improving the quality of learning, particularly in the development of a student-centered learning approach in middle school.

4. CONCLUSION

Building upon the results and discussion, it can be concluded that the guided inquiry learning model effectively improves student learning outcomes. This is evidenced by the increase in students' average grades from 71 before the model was implemented to 80.2 after implementation, a 9.2-point increase. Therefore, it can be concluded that the guided inquiry learning method is effective in improving students' conceptual understanding and skills in creating color compositions. The implementation of guided inquiry also increases students' activeness, creativity, and conceptual understanding. The learning process becomes more meaningful because students are directly involved in exploration and problem-solving. Although effective, this model has challenges in implementation, such as limited practical tools, the need for more time, and the need for intensive mentoring for students who lack confidence.

Throughout the process, students are actively involved in learning, particularly in exploring primary colors to produce secondary and tertiary colors, as well as creating artwork through leaf printing with mixed colors. These activities not only strengthen students' understanding of color concepts but also foster curiosity, cultivate critical thinking skills, and enhance collaboration and communication skills. The effectiveness of guided inquiry is evident in the improvement in students' cognitive, affective, and psychomotor learning outcomes, as well as in the positive responses of students who found the learning more engaging, challenging, and meaningful. Thus, the guided inquiry method has been proven to contribute positively to improving the quality of fine arts learning, particularly in color composition.

As a recommendation, educators are advised to continue optimizing the implementation of the guided inquiry learning method by carefully adjusting lesson plans, preparing relevant media, and providing appropriate guidance during the exploration process. Combining it with other active and contextual learning approaches can also be an alternative to increase learning effectiveness. Future researchers are expected to expand the scope of their research, both in terms of the number of subjects and the duration of implementation, to achieve more comprehensive results. Furthermore, further studies are needed to examine the influence of the guided inquiry method on students' affective and psychomotor aspects in arts and culture learning.

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