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Elementary School Students' Learning Styles: Perspective of Creative Thinking Skills

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ABSTRAK

Gaya belajar dapat membantu siswa meningkatkan kemampuan berpikir kreatifnya. Namun guru tidak melakukan modifikasi gaya belajar pada saat proses pembelajaran sehingga kemampuan berpikir kreatif siswa tidak sesuai harapan. Penelitian ini bertujuan untuk menganalisis gaya belajar anak sekolah dasar dari sudut pandang kemampuan berpikir kreatif. Jenis penelitian ini adalah deskriptif kuantitatif dengan pendekatan menggunakan desain studi survei. Sampel penelitian ini adalah siswa kelas IV sekolah dasar. Alat yang digunakan untuk mengumpulkan data antara lain tes, angket, dan observasi. Statistik deskriptif digunakan untuk menganalisis data. Berdasarkan temuan penelitian ini, anak dengan gaya belajar visual memiliki tingkat berpikir kreatif yang tinggi. Hasilnya, penelitian ini mengungkapkan bahwa setiap anak idealnya dapat mengembangkan kemampuan berpikir kreatif dengan pembelajaran yang dapat menyesuaikan dengan gaya belajar individu. Temuan penelitian ini dapat membantu meningkatkan kemampuan berpikir kreatif siswa dan menjadi salah satu jawaban guru dalam memilih model atau pendekatan pembelajaran berdasarkan gaya belajar siswa. Penelitian di masa depan harus mengevaluasi kemanjuran strategi atau model untuk meningkatkan bakat kreatif siswa. Selain itu juga dimungkinkan untuk membuat media, model, dan buku teks untuk membantu anak sekolah dasar memperkuat kemampuan berpikir kreatifnya.

ABSTRACT

Learning styles can help students enhance their creative thinking abilities. However, the teacher did not modify the learning style during the learning process, therefore students' creative thinking abilities did not meet expectations. This study aims to analyze elementary school children's learning styles from the standpoint of creative thinking skills. This is a descriptive quantitative research approach using a survey study design. The sample for this research was fourth-grade elementary school students. The tools used to collect data included tests, questionnaires, and observations. Descriptive statistics were used to analyze the data. According to the findings of this study, children with a visual learning style have high levels of creative thinking. As a result, this study reveals that every kid may develop creative thinking abilities ideally with learning that can adjust to individuals' learning styles. The findings of this study may help to improve students' creative thinking skills and serve as one of the answers for teachers in selecting learning models or approaches based on students' learning styles. Future studies should evaluate the efficacy of strategies or models for improving pupils' creative talents. Aside from that, it is feasible to create media, models, and textbooks to help primary school children strengthen their creative thinking skills.

1. INTRODUCTION

Learning style is one of the things that influences to facilitates the process of communication in learning. A student's learning style shapes their views, interactions, and responses to the learning environment (Huang et al., 2020; Wahyuni, 2022). This learning style is critical to kids' creative thinking. To create innovative and flexible solutions in everyday life, creative thinking abilities are required (Hashim et al., 2022; Octaviana & Kurniasih, 2020). The learning styles of kids have a significant impact on their creative thinking abilities (Mukti & Soedjoko, 2021; Winiarsih et al., 2021). Learners' learning styles are classified into three types: visual, auditory, and kinesthetic. The visual learning style is a learning style that focuses on visual acuity, so concrete evidence is shown to pupils so they understand (Rini et al., 2020; Supit

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et al., 2023). Auditory learning style is a learning style that prioritizes listening to grasp and recall the teacher's subject matter. Meanwhile, the kinesthetic learning style is a learning style in which students carry out physical activities and direct involvement, which can be in the form of experiencing it for themselves to understand the subject matter (Hafizha et al., 2022; Lestari & Widda Djuhan, 2021). Learning style refers to how a person receives, focuses, interprets, and processes new information and then changes it to build new skills (Magulod, 2019; Muharrima & Manoy, 2021). One of these skills is creative thinking skills.

The appropriateness of ideas put up by individuals in dealing with a problem, event, or scenario in terms of fluency, adaptability, and originality are referred to as creative thinking skills. Creative thinking competence is one of the competencies in the era of Education 4.0 (Kin & Kareem, 2019) (Dilekçi & Karatay, 2023). Creative thinking is needed for pupils because it is to solve problems that are faced and that will be faced in various ways and new solutions so that life is more productive. Pupils with creative thinking will be able to differentiate thoughts or ideas clearly, debate well, solve difficulties, be ready to develop explanations, hypothesis, and grasp complicated things more clearly (Astuti et al., 2020; K. C. Suryandari et al., 2020). The characteristics of creative people are having high curiosity, being imaginative, feeling challenged by diversity, daring to take risks, and respecting talents and abilities. Nevertheless, the student's creative thinking abilities remain limited. This may be discovered in earlier studies, such as the study on students' creative thinking skills when learning science, where each sign of creative thinking is still low (Kurnia et al., 2021; Murdiana et al., 2020). Second, the research conducted on the creative thinking skills of elementary students in terms of indicators of fluency, flexibility, and original thinking is still low (Ismail et al., 2018). Third, research conducted by (Handayani et al., 2019), revealed that creative thinking skills are still not high enough. In addition, According to the 2015 TIMSS (Trends in International Mathematics and Sciences Study), Indonesia is placed 44th out of 49 nations, with a score of 397 (Hadi & Novaliyosi, 2019). Furthermore, according to research on the capacity to think creatively mathematically, the markers for fluency and elaboration are still low and sufficient for the originality indicators (Rhosaliana et al., 2021).

According to the findings of interviews and observations with class IV instructors, students' creative thinking abilities were low, and learning was not done following students' learning styles. The supply of open questions with a low percentage of achievement for each sign of creative thinking, including fluency at 60%, flexibility at 50%, originality at 40%, and elaboration at 55%, may be observed in the exam results. These findings are applicable to several earlier investigations, including research found this means that 46.45% of fourth-grade students at SD No. 2 Pemaron have creative thinking skills that are below the average, including the medium group (Sekar., D. K. S., Pudjawan, K., Margunayasa, 2015). Another research conducted on class IV students at SD Negeri 1 Prapaglor, Pituruh, Purworejo demonstrated that pupils' creative thinking skills were 0% in the first cycle (Bernadi, 2017). The exam also includes four indications of creative thinking: fluency of thought, flexibility of thought, elaboration, and originality. Learning in primary schools is still restricted to the conventional and does not take into account the qualities of individuals. Because of teacher-centered classroom learning, pupils are not innovative in their search for knowledge or subject matter.

At present, students' learning styles are of great concern to optimize the learning process, especially in this independent curriculum, an initial assessment or diagnosis is carried out to find out the learning styles of students so that teachers can teach according to the characteristics of students (Ms, 2023; Yaniawati et al., 2020). To design an efficient teaching and learning process for kids, the instructor must first determine the learning preferences of the pupils so that student learning outcomes including creative thinking can be optimal. In addition, learning styles and creative thinking are factors that influence students' creativity. Other studies also said that the teacher's efforts to recognize students' learning modalities (visual, auditory, or kinesthetic) are highly expected in helping to maximize the domination function of students' brains as a form of skill in organizing and managing information through various physical and mental activities (Firdausi & Asikin, 2018)(Irbah et al., 2019).

This research is necessary to determine students' learning styles from the standpoint of creative thinking skills. Learning styles might be one of the determining elements in students' learning performance. In addition, learning styles are directly related to creativity because students' aesthetic experiences affect creativity and students' self-confidence in their creative potential (Agustinaningsih, 2020; Putri Ningrat et al., 2018). Individuals' learning styles also determine how they receive and process knowledge, which influences the results they produce. Furthermore, teachers who are aware of their students' varying learning style preferences will generate more successful learning experiences (Magulod, 2019; Musaidah et al., 2020; Ningrum et al., 2023). Next, the independent curriculum that is used now also prioritizes differentiated learning, one of which is process-differentiated learning based on students' learning styles.

Previous research on the topic of learning styles and creative thinking skills included research on students' creative thinking skills in learning mathematics in terms of reflective cognitive style (Sa'adah et al., 2019). The findings of this study show that introspective participants had a high degree of creative

thinking skills, as evidenced by their ability to meet all indications of creative thinking while addressing issues Second, research on teacher creativity in utilizing IT-based media in terms of students' learning styles (Dewantara et al., 2020). The findings of this study show that the usage of educational media does not take into account the requirements, preferences, and learning styles of various students. Third, under the MEA learning model, research on mathematical creative talents in terms of learning styles is being conducted (Octaviana & Kurniasih, 2020). Three creative thinking indicators (fluency, originality, and elaboration) are met by students with visual learning styles, four (fluency, flexibility, originality, and elaboration) are met by students with auditory learning styles, and four (fluency, flexibility, originality, and elaboration) are met by students with kinesthetic learning styles.

However, this research differs from past research in that the issue of this research is relevant to the twenty-first century, especially creative thinking skills (Lailatul Alifah & Sukartono, 2023; K. Suryandari et al., 2017). In addition, this research was conducted on elementary school students in the Independent Curriculum Science Learning. This topic adheres to the Ministry of Education and Culture's recommendation for individualized learning in the Independent Curriculum. Differentiated learning is learning that is carried out depending on the needs of the students, namely their learning readiness, learning profile, interests, and skills (Fitra, 2022; Hidayati & Sujarwati, 2023). This context is based on the student's learning style profile. The aim of this study is to analyze elementary school children's learning styles from the standpoint of creative thinking skills. The novelty of this study can help teachers tailor their instruction to students' preferred learning modes. Aside from that, the findings of this study might be used to increase kids' creative thinking abilities, particularly at the primary school level.

2. METHOD

The quantitative research approach is used in this study. A survey research design is used in this study. This study's population included all primary schools in Mojolaban District, Sukoharjo Regency. This study's sample consisted of 46 fourth-grade children from SD Negeri Plumbon 01 and SD Cangkol 03. This study's data-gathering methods included tests, questionnaires, and observations. The test is used to collect creative thinking data. Questionnaires and observations are used to collect data on students' learning styles. The test instrument by giving open description questions totaled 10 questions on natural science material with a working time of 35 minutes which had various solutions and problem-solving strategies. Data to identify the characteristics of students' learning styles were taken based on the results of a questionnaire totaling 48 items about children's learning styles consisting of auditory, kinesthetic, and visual styles (Porter et al., 2015). Each learning style item questionnaire consists of 16 items. This questionnaire uses a Likert scale from 1-5. Creative thinking skills are measured using indicators that include fluency, flexibility, originality, and elaboration (Winiarsih et al., 2021). Lattice of creative thinking instruments is show in Table 1.

Table 1. Lattice of Creative Thinking Instruments

No.	Indicator	Descriptor
1.	Fluency	Creating a flurry of ideas, answers, and problem-solving solutions. Provides several methods or options for doing things Consider more than one solution.
2.	Flexibility	Create a variety of ideas, replies, or questions. Seeing a problem from several perspectives.
3.	Originality	Capable of giving birth to fresh and distinct expressions Thinking beyond the box. Capable of forming novel combinations of its pieces.
4.	Elaboration	Capable of enriching and developing an idea or product Increasing the attraction of an item, idea, or situation by adding or describing its aspects.

The following is a lattice of students' learning style instruments obtained from the book Quantum Learning: Getting Used to Comfortable and Fun Learning (Porter et al., 2015) as show in Table 2, Table 3, and Table 4.

Table 2. Grid of Visual Learning Style Instruments

No.	Indicator	Descriptor
1.	Neat and orderly	Make notes neatly and regularly Study in a neat environment Pay attention to neatness in dress
2.	Prefer to read rather than be read	Prefer to read a book rather than listen to the explanation from the teacher.
3.	Good long-term planner	Prepare to study for exams in advance Complete assignments several days before assignments are due
4.	Be meticulous about details	Be thorough in working on the questions Research the answers to the questions before collecting them
5.	Remember what was seen rather than what was heard	It is easy to remember the material given by the teacher in writing rather than the material explained by the teacher. Record the material provided by the teacher in the form of written notes. Easy to accept material in the form of pictures Difficulty remembering verbal instructions

Table 3. Grid of Auditory Learning Style Instruments

No.	Indicator	Descriptor
1.	Easily distracted by noise	Study in silence
2.	Study while listening, and focus more on what was said than what was seen.	Study by listening to explanations from the Teacher
3.	Enjoy reading aloud	Read books aloud Read by moving your lips
4.	Likes to debate and explain things thoroughly	Learn with the discussion method Describe something at length
5.	He struggles to write but excels at telling stories	Prefer to tell stories than write

Table 4. Kinesthetic Learning Style Instrument Lattice

No.	Indicator	Descriptor
1.	Learn by practice	Learn by doing practice questions
2.	Always physically active and on the go	Responding to something with physical movement Can't stay still for a long time Use your finger as a guide when reading Like activities related to physical
3.	Speak slowly	Explain things to others slowly
4.	Want to do everything Something	Do more than one activity at a time Memorize by walking
5.	Enjoys busy games	Likes learning through games

The validity of the expert was employed in this study to determine the validity of the instrument data (judgment expert). This validity is done by consulting the instrument items to experts. The reliability of the test research instrument was 0.79 and the questionnaire was 0.75 so it can be said to be reliable because it is more than 0.6. This study's data analysis method is descriptive non-parametric statistics. The information will be provided as totals, averages, and percentages. Furthermore, the data will be displayed in the form of diagrams and tables. The procedure or stage of this research is carried out by looking for review literature on topics or problems that occur in the elementary school field. After that make the formulation of the problem and research objectives. Next, the researcher made a grid and instruments and research. After being declared valid the researcher collected data at school. Then the researcher analyzes and processes the data to draw research conclusions.

3. RESULT AND DISCUSSION

Result

Based on the findings of the investigation, the following information is obtained:

Student Learning Style Data

Data on visual, auditory, and kinaesthetic styles of learning were collected based on the findings of data gathering to determine students' learning styles obtained as show in Figure 1.

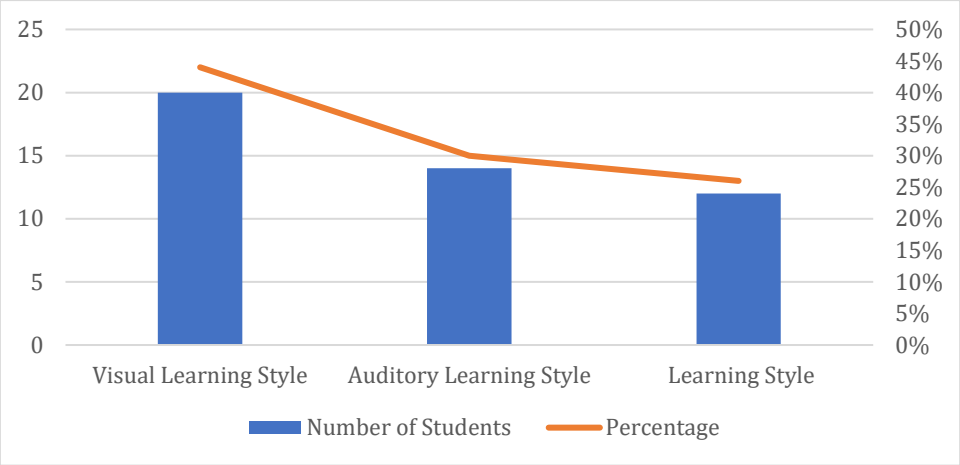

Figure 1. Learning Style Percentage Results

Based on Figure 1, the learning style of the students who obtained the highest percentage of 44% was the visual learning style with a total of 20 students. There are 14 students with an auditory learning style or 30%. Furthermore, the kinesthetic learning style of students totaled 12 students, or 26%. Therefore, it can be concluded that the majority of the learning styles of students in class IV are visual learning styles. Meanwhile, the kinesthetic learning style is the least owned learning style by class IV students as the subject of this study. The following is an observation of learning in SDN Plumbon 01 class using a PowerPoint learning medium that supports visual learning styles in Figure 2.

Figure 2. Learning Using Powerpoint Media

The following is an observation of learning that has been done using conventional methods of interrogation such as lectures, questions, and discussions and not using interactive media in SDN Congkol 03 can be viewed in Figure 3.

Figure 3. Learning Using Conventional Methods and Media

Creative Thinking Ability Data

In the second data collection, a written test was also carried out to find out creative thinking skills by giving open description questions to students. The following research results are presented in Figure 4.

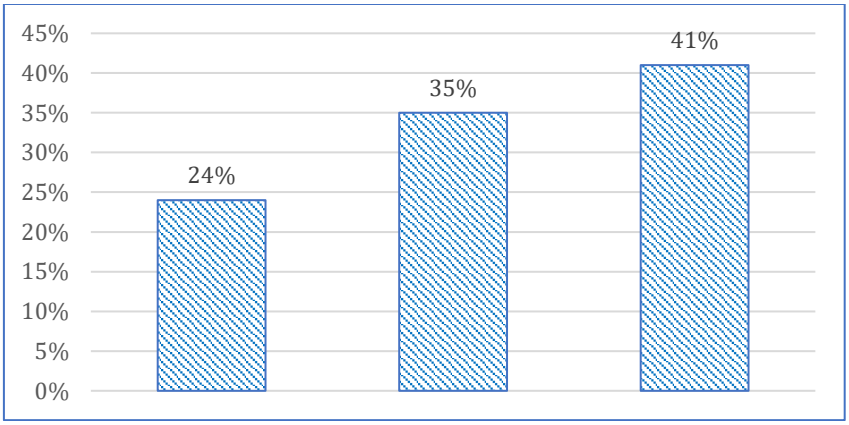

Figure 4. Child Diagram based on Creative Thinking Skills

According to Figure 4, pupils in the top group had 24%, or as many as 11 students, creative thinking talents. The medium group has 35% of the pupils or up to 16 kids. pupils in the poor group have a creative thinking capacity of 41% or as many as 19 pupils. As a result, it may be inferred that pupils' creative thinking skills remain poor at the moment.

Data Analysis of Learning Styles Based on the Perspective of Creative Thinking

Table 5 shows an examination of students' learning styles on creative thinking skills considering both learning style data and abilities to think creatively obtained.

Table 5. Learning Style Analysis Data Based on Creative Thinking Skills

Learning Style	High	Medium	Low	Total
Visual	7	8	5	20
Auditory	6	3	5	14
Kinesthetic	2	3	7	12
Total				46

Based on Table 5, the visual learning style is a learning style that dominates the diversity of students' creative thinking abilities, namely as many as 7 students at a high level, 8 students at a medium level, and 5 students at a low level. Students with high-level auditory learning styles are 6 students, 3 are at

medium level, and 5 students are at low level. Furthermore, students with kinesthetic learning styles achieved creative thinking abilities of only 2 students at high level, 3 students at medium level, and 7 students at low level. Based on the explanation above, it can be concluded that the visual learning style is the learning style that most students have in achieving high-level creative thinking skills. The whole sample size of 14 youngsters has an auditory learning type. When 14 children with creative thinking skills are examined, 6 children fall into the high group, 3 children fall into the medium category, and 5 children fall into the low group. When compared to the diversity of pupils, the kinaesthetic learning style is a minority learning style. An auditory learning technique is used by 12 youngsters. When the 12 children with creative thinking skills are considered, 2 children are in the high group, 3 children are in the medium category, and 7 children are in the low category.

Discussion

Students with a visual learning style obtain the greatest creative thinking skills, with 7 at a high level, 8 at a medium level, and 5 at a low level. According to the findings of this study, visual learning styles complete three indicators of creative thinking, such as fluency, flexibility, elaboration or fluency, flexibility, originality, and students with kinaesthetic learning styles fulfil at least one of these indicators (Winiarsih et al., 2021). Other studies have also revealed the sequence of creative thinking abilities in terms of learning styles, the first being visual, auditory, and kinaesthetic learning styles (Mukti & Soedjoko, 2021). However, the findings of this study vary with prior research, which found that the average creative thinking capacity of pupils using a kinaesthetic learning style is greater than that of students with a visual learning style (Marzuki et al., 2019). The results of this study are at odds with earlier research, which revealed that children who learn visually are more inclined to think creatively and numerically (Winiarsih et al., 2021). Other study revealed learners with an auditory learning style offer longer explanations and can solve issues in different ways than pupils with other learning types (Lampropoulos et al., 2019).

Based on the findings of these statistics, it can be concluded that, in general, the learning style that obtains the greatest percentage in creative thinking is the visual learning style. This result is related to the results of observations from the two schools that were the subject of the study, there were differences in the teaching methods used by the teachers. At SDN Plumbon 01 the teacher teaches using PowerPoint media which displays from concept map charts to giving examples in the form of video shows. Meanwhile, at SDN Cangkol 03 the teaching methods used by the teacher are lectures, questions and answers, and discussions. Pupils have better creative thinking skills when the method used is using PowerPoint and using concept map charts. This is because according to the theory, the material controlled by pupils is material controlled by the teacher (Muslicha, 2015). This causes if the teacher is not creative in developing the material, pupils will also not be creative. In addition, the lecture method also causes pupils to be passive so they tend to be boring and hinder the development of student activities (Bravo et al., 2022; Wibowo, 2016).

Another study reveals that teachers do not employ learning media in English material classrooms following students' learning style preferences, leading to low student accomplishment, low attention, and bad views toward teachers and learning materials (Yotta, 2023). This research differs from that study in that it effects learning style in critical thinking on natural and social science subject matter, whereas earlier research influences learning accomplishment and English language acquisition. As a result, this research can serve as a resource for instructors to ensure that learning is carried out following students' learning style preferences. Apart from that, teachers can prepare learning based on indicators of each student's learning style, which will of course maximize students' thinking abilities, particularly creative thinking abilities. This is consistent with previous research, which revealed that adopting a learning approach based on students' needs will have a positive impact on students' learning (Ezzeddine et al., 2023). This is also consistent with prior study, which discovered that students' creative mathematical thinking abilities are influenced by their learning styles because students' understanding of learning and problem-solving will improve if they recognize their learning styles and learn to follow them (Maylina Primusti Sari & Abadi, 2022). As a result, teachers must thoroughly understand their students' learning styles to construct learning approaches or procedures that affect the student's learning processes and outcomes (Azzahrah Putri et al., 2021; Irawati et al., 2021).

The extent of the research field limits the scope of this study's findings. This study was limited to a single district. Furthermore, one of the disadvantages of this study is the small number of respondents. However, the findings of this study have an impact on learning, particularly for teachers looking to develop their pupils' creative thinking skills. Future studies should evaluate the efficacy of strategies or models for improving students' creative talents. Aside from that, it is feasible to create media, models, and textbooks to help primary school children strengthen their creative thinking skills.

4. CONCLUSION

Based on the findings and discussions, the conclusion reached is that kids with a visual learning style have excellent creative thinking abilities. As a result, for each kid to develop creative thinking abilities to their full potential, teachers must be able to modify pupils' learning styles. The findings of this study have implications for learning, particularly for teachers looking to increase their pupils' ability to think creatively. Future studies should evaluate the efficacy of strategies or models for improving pupils' creative talents. Aside from that, it is feasible to create media, models, and textbooks to help primary school children strengthen their creative thinking skills.

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