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The Use of the Mind Mapping Method to Overcome Problems in Student Learning Outcomes in Science Subjects in Elementary Schools

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Abstrak

Metode pembelajaran yang kurang menarik bagi siswa dapat mengakibatkan hasil belajar siswa kurang memuaskan. Penelitian ini bertujuan untuk menganalisis penggunaan mind mapping dalam menyikapi hasil belajar siswa sekolah dasar. Penelitian ini menggunakan metode penelitian deskriptif kualitatif. Jenis penelitian ini adalah studi kasus dimana data diperoleh dari wawancara, observasi, dan dokumentasi. Uji validitas data dalam penelitian ini menggunakan teknik triangulasi. Teknik analisis data dalam penelitian ini menggunakan model interaktif melalui pengumpulan data, reduksi data, dan penarikan kesimpulan. Metode mind mapping dalam mengatasi masalah hasil belajar sangat efektif. Karena dalam wawancara anak sebelum guru menerapkan metode mind mapping dan setelah guru menerapkan metode mind mapping sangat terlihat. Anak-anak lebih antusias dalam proses belajar mengajar. Sebelum guru menerapkan metode ini, anak mengalami siklus jenuh sehingga mengakibatkan hasil belajar siswa kurang memuaskan. Pemahaman anak terhadap materi yang diajarkan dengan metode mind mapping mengalami peningkatan perilaku. Suasana belajar bagi anak menjadi menyenangkan karena metode mind mapping membebaskan anak untuk belajar sambil bermain dan menggambar.

Kata kunci: *Metode mind mapping, hasil belajar.*

Abstract

Learning methods that are less attractive to students can result in unsatisfactory student learning outcomes. This study aims to analyze the use of mind mapping in addressing the learning outcomes of elementary school students. This study uses a descriptive qualitative research method. This type of research is a case study in which data are obtained from interviews, observation, and documentation. Test the validity of the data in this study using triangulation techniques. The data analysis technique in this study uses an interactive model through data collection, data reduction, and conclusion. The mind mapping method in overcoming problems in learning outcomes is very effective. Because in the interviews, the children before the teacher applied the mind mapping method and after the teacher applied the mind mapping method were very visible. Children are more enthusiastic in the teaching and learning process. Before the teacher applies this method, the child experiences a saturation cycle, resulting in unsatisfactory student learning outcomes. Children's understanding of the material taught using the mind mapping method has increased behavior. The learning atmosphere for children is fun because the mind-mapping method frees children to learn while playing and drawing.

Keywords: Metode mind mapping, hasil belajar.

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1. INTRODUCTION

Elementary school is a formal education with a vision and mission to implement primary education goals through teaching and learning (Putri & Ain, 2022; Yati & Amini, 2020). An effective teaching and learning process only sometimes means that the teacher must explain in front of the class, and students must focus during the learning process. This can make students bored with the material presented by the teacher, so they need help understanding the material (Amiryousefi, 2017; Hest et al., 2021). Effective learning is a teaching and learning process that does not only focus on the results achieved by students but how effective learning is in providing good understanding, intelligence, determination, opportunity, and quality and can cause behavior changes and apply them in children's lives (Antara et al., 2022; Fakhrurrazi, 2018). In general, teachers often use conventional methods.

The traditional approach is defined as more teacher-centered learning and one-way communication from teacher to student (Astra et al., 2020; Rahayu et al., 2019). Currently, the learning method that is often used is the mastery of the concept of disability. The subject of learning is explaining the material in front of the class, with a learning cycle where students only listen, read, and work on questions. Then if the teacher does not give assignments to students, students will not be studied again. The method is only achieved repeatedly or in repetition. Students are not required to analyze learning material that is only traditional critically. The drawbacks of conventional methods are that students become passive, and if used for too long, it will be dull and cause visual loss (Uswatun, 2019; Widyari et al., 2018). That the lecture method is a way of delivering teaching carried out by the teacher through direct narrative or explanation in front of students (Hikmawati, 2020; Pariska, 2022). As a result, learning outcomes become less than optimal and far from expectations. Even at the time of evaluation, many children got less than the KKM. The weaknesses of the lecture method include making students less creative, the material distributed only based on the teacher's memory, and the possibility of subjects that are only partially acceptable to students (Hadi Santosa et al., 2018; Hikmawati, 2020). Therefore, it can be concluded that the child does not understand the material presented by the teacher.

Good and quality learning can be achieved if students and teachers interact with each other or participate in mutually beneficial activities (Erwanda, R. O. D. et al., 2022; Karta et al., 2022). Interest significantly impacts education, and students need to be interested in these subjects to learn as well as possible. Students' disinterest in an issue caused by methods that are less interesting to students makes students bored with subjects which results in a lack of understanding of the material being taught. There are many ways or methods to convey learning material in the correct class to support effectiveness in teaching and learning according to the needs and characteristics of the students they teach. The learning method is a compelling presentation of certain lesson content in a way that is easily understood by students (Nurfathoanah, 2015; Nurrita, 2018). One of them is the mind mapping method. Mind mapping is a technique using visual images and other graphic infrastructure to form impressions (Latifah, 2020; Nurrachmawati & Istaryatiningtias, 2022).

From this, the teacher switched to using the mind mapping method to increase student learning outcomes and overcome student saturation. Mind mapping is a way to involve students and facilitate students' summaries and designs using only pictures, short words, and critical material (Pawitra, 2013; Polat & Aydın, 2020). Meanwhile, according to Michael explained that the benefits of mind mapping are activating the whole brain, clearing the mind of mental clutter, having the ability to focus on the subject, helping to show the relationship between different information, and a clear picture of the whole and details, and allowing concepts to be grouped and compared (Safitri, 2016; Sari, 2016). Mind mapping is applied in the field of education. Mind Maps can help us in many ways, such as Planning, communicating, being more creative, solving problems, directing attention, organizing and clarifying thoughts, remembering well, learning faster and more effectively, and practicing the big picture (Aprinawati, 2018; Erwanda, R. O. D. et al., 2022). The mind map is adapted to one of the characteristics of elementary school students who prefer to play and have fun. Mind map drawing technology, students do it take notes or summarize with critical words and pictures. This combination forms associations in students' minds, so when students see a picture or keyword, then students memorize the material easily associated with the image. This mind mapping method is needed in teaching and learning activities so students are more enthusiastic about learning. The definition of mind mapping provides an overall picture of a broad topic or area, allows us to plan routes or make decisions and know where we are going and where we are, and collect large amounts of information in one place (Aprinawati, 2018; Masriani & Mayar, 2021). Before grouping ideas in a mind map template, they should read

all the material to understand what they will do with the mind map. By using the mind mapping method, students break down topics into more detailed subtopics in simple mapping (Rochanah, 2021; Safitri, 2016). The steps of the mind mapping method consist of the teacher mediating the learning objectives to be achieved and explaining the concepts/problems that students respond to. In addition, mind mapping encourages students to think creatively.

At Tobo Elementary School, which is in Jati District, Blora Regency, there is a problem, the teacher, who previously only explained learning material in front of the class, used the lecture method. Then students only pay attention to the teacher's explanation, making children less active, often sleepy, and enthusiastic about learning. From this, it creates student learning outcomes unsatisfactory. Then the teacher looks for the appropriate method and makes children more active in education. Using the mind mapping method in science learning can overcome student interest because it can make students feel happy and not bored during education. This makes it easier for students to understand, remember, and retrieve the information received. Teaching and learning activities in class are also more fun because students can use their imagination and creativity to develop different student ideas (Erwanda, R. O. D. et al., 2022). Previous research showed that the jigsaw-type cooperative learning model assisted by mind mapping really influences the speaking skills of fourth-grade students (Febiyanti et al., 2020). Meanwhile, another previous research stated that this method could overcome student interest by sharing material and choosing classic conversations, assignments, and keywords, brainstorming, selecting all parts of the material, making mind maps with teacher guidance, and learning reflection with students (Safitri, 2016). The previous research stated that developing integrated thematic teaching materials using the mind mapping method in grade V Elementary Schools were declared valid, feasible, and effective (Masriani & Mayar, 2021). The difference between this research and previous research is that this research analyzes the use of mind mapping in addressing student learning outcomes. Previous studies only discussed the influence of mind mapping on training students' speaking skills, student interests, and the development of teaching materials using the mind mapping method. No one has discussed more deeply the influence of mind mapping in overcoming student learning outcomes. This study aims to determine the use of mind mapping in overcoming student learning outcomes. The difference between this research and previous research is that this research analyzes the use of mind mapping in addressing student learning outcomes. Previous studies only discussed the influence of mind mapping on training students' speaking skills, student interests, and the development of teaching materials using the mind mapping method. No one has discussed more deeply the influence of mind mapping in overcoming student learning outcomes.

2. METHOD

This research used a descriptive qualitative method. The qualitative research is a method for studying the conditions of natural places where the researcher is the main instrument (Adlini et al., 2022). Meanwhile, qualitative research intends to understand phenomena about what is experienced by research subjects, such as behavior, perceptions, motivations, actions, and others, holistically and using descriptions in the form of words and language in a particular context (Haida, 2018). The type of research design is a case study. The case study is in-depth research about a group whose goal is to obtain accurate and complete in-depth information from an ethnic group. Case studies are empirical research examining contemporary phenomena in real-life contexts (Nur'aini, 2020). Case studies produce data that is further analyzed to make a theory. This study's data were obtained from interviews, observation, and documentation. This study uses a data validity test. Test the validity of the data used using technical triangulation. Triangulation techniques use in-depth

interviews, observation, and documentation (Mekarisce, 2020). Then the data analysis technique in this study uses an interactive model from Miles and Huberman through data collection, data reduction, and concluding (Ilyas, 2016). The location of this research is SDN Tobo Dukuh. Cerme, Village. Tobo, Jati District, Blora Regency. The implementation of this research starts from the planning, implementation phase, and report-writing stages. The subjects and objects of this study were school principals and Class V teachers.

Data collection techniques used in this study used interviews, documentation, and observation. An interview is a meeting between two people where information and ideas are exchanged through questions and answers to give meaning to a particular topic (Pratiwi, 2017). Discussions are used to obtain information about the use, obstacles, and development of learning outcomes through mind-mapping learning. The source of information in this interview was the school principal and class V teacher at SDN Tobo Jati Blora. Observation is a data collection technique through direct observation of the research site. Observation is research by observing and recording various biological and psychological processes directly or indirectly that appear in a symptom on the research object (DiCicco-Bloom & Crabtree, 2006). Then the definition of documentation in the study, according to KBBI, is a document that presents information from original research or directly from the source. It is more common in proof methods based on any basis, whether written, oral, graphic, or archaeological (Nilamsari, 2014). Research activities will be documented. The presentation of the research instrument Table 1.

Table 1. Research Instrument

Aspect	Indicator
Mind mapping method	Description
	Benefit
	Implementation
	Advantages or disadvantages
Overcoming the problem of learning outcomes	Influencing factors
	How to overcome

Data analysis is collecting, reducing, presenting, and concluding research results (Rijali, 2018). The data analysis technique used in this study is interactive analysis. Data collection, data reduction, data presentation, and the last step is concluding (Sugiyono, 2018). These steps are data reduction, data presentation, and conclusion. Advantages or disadvantages. Data reduction is simplification translated into meaningful information by selecting, aligning, and validating raw data, making it easier to conclude. Reducing data means summarizing, choosing priorities, focusing on essential topics that are appropriate to the research topic, looking for themes and patterns, finally providing a clearer picture, and facilitating the continuation of data collection (Nurdin & Hartati, 2019). The presentation of data is often used in qualitative data in narrative form. Data presentations are a collection of systematically arranged and easy-to-understand information. Concluding is the final stage of data analysis, carried out by reviewing data reduction results with further reference to the formulation of the problem and the goals that can be achieved. The data that has been compiled is compared with one another to conclude an answer to the existing issues.

3. RESULT AND DISCUSSION

Result

Based on observations and interviews with teachers in elementary science learning, it tends to be boring if you only use consistent lecture methods. Students become less active,

often sleepy, and less enthusiastic about learning if the teacher only explains the material in front of the class. The teacher's strategy used to overcome children's learning outcomes is using the mind mapping method. According to teachers at SDN Tobo, mind mapping is a learning method by associating some material in visual or image form. Teachers use mind mapping as a method of choice, effectively overcoming student learning outcomes. The benefit of the mind mapping method is that students can associate learning material with everyday events. So that students can think critically and overcome boredom in the learning process. The teacher also feels the benefits. Namely, the teacher finds a more accessible and more effective method as a teaching medium. In addition, students become more active in the learning process. From student activity, teachers can take advantage of this to carry out assessments with better results than before using mind mapping.

Meanwhile, Tobo Elementary School teachers implemented the mind mapping method by dividing students in class V into several groups and then students connecting learning material with ideas related to that material. In implementing this method, the first is to determine the sub-theme. Then from the sub, the theme is further divided into topics that are hyphenated according to the child's imagination. This implementation is considered excellent and effective. The teacher said the advantages of using the mind mapping method were increasing student learning enthusiasm and creativity, creating new arrangements for students, and finding new ideas. In addition, children are more able to think critically using this method. Then the drawbacks of this method are the difficulty in compiling student mind maps; students are required to be creative so that students can make mind maps, limited knowledge and insight of students, and only active students contribute. It takes up a lot of time. Then the factors that influence mind mapping are used. Namely, the teacher finds children's difficulties understanding and saturation in the subject. Then the teacher's way to overcome student learning outcomes is by giving directions to students to seek insight or knowledge via the internet. The teacher explains a subject, but the child needs to be more enthusiastic about learning because of an inappropriate method. Then the factors that influence mind mapping are used. Namely, the teacher finds children's difficulties understanding and saturation in the subject. Then the teacher's way to overcome student learning outcomes is by giving directions to students to seek insight or knowledge via the internet. The teacher explains a subject, but the child needs to be more enthusiastic about learning because of an inappropriate method.

The child's saturation with the less varied material presented makes the child less focused when explained in front of the class. This results in unsatisfactory student learning outcomes; literacy is needed before the subject begins. The results of interviews with the class V teacher show that after applying the mind mapping method, the children are happier and look more active. On the other hand, children who do not like to read prefer to be creative using mind mapping. However, schools have not enforced routine literacy every day before lessons. This requires the teacher to have a specific strategy to overcome a way so that children's learning outcomes can increase. The school starts the learning process at 07.00-11.30 WIB. When interviewed regarding this method, the teacher could explain well from his point of view, but when interviewing the school principal, he did not understand the mind mapping method. It's just that according to the school principal, grade V children's grades when using the lecture method are abysmal. Students need to be more active in science subjects, which are memorized. Previously, teachers used more lecture methods, making students quickly bored and sleepy. Then the teacher revealed that using mind mapping made students happier because it was interspersed with drawing activities that made the child's mood happy. According to my interview with the teacher, if students are bored with a lesson, the teacher intersperses it with ice breaking. However, after the ice-breaking, the students returned to being lazy and bored with their studies. So that the student assessment results

decreased. In class V, the teacher tries to change the learning method that the child likes. What I catch from the teacher's explanation, students want to draw according to their imagination combined with their favorite colors and can learn in groups. According to the teacher, the advantages of the mind mapping method are overcoming student enthusiasm for learning, overcoming student creativity, bringing up new ideas in students' brains, and overcoming student understanding of science subjects. Also, from decreased student scores, it increased slightly. According to my interviews with students, they prefer this method because they can play with colors and draw pictures according to their imaginations. The research results support that the mind mapping method positively influences students' creative thinking in class V science content at SDN 2 Mekarwangi, Lebakwangi District, Kuningan Regency.

Based on the results of interviews with teachers and principals of SDN Tobo that it is necessary to have a plan that must be planned before the teaching and learning process takes place, namely the learning implementation plan (RPP), which is linked to the mind mapping method. Infrastructure must exist before the mind mapping method is used. This plan aims to plan learning activities using the mental mapping method so that students stay focused so that they can be active during the teaching and learning process properly and receive learning material.

Discussion

Mind mapping is a note-taking technique with words, colors, lines, symbols, and images, mixing and matching the working potential of the brain to make it easier for someone to organize and remember all kinds of information (Rosliana, 2017; Wati & Sudigdo, 2019). This is following interviews with teachers who revealed that the mind mapping method is a learning method that applies systematic grouping of keywords combined with systematic lines. The advantages of the mind mapping method are: (1) A mind map looks closely at all aspects of the problem and provides a wide range of perspectives, allowing us to design, make decisions, and know where we are, (2) Collect many big data in one location. (3) Promotes problem-solving and gives breakthroughs. (4) Innovations can be made that are easy to see, read, think about and remember (Eka Lestari et al., 2017; Ekasari, 2020). This is proven by the benefits of SDN Tobo's mind mapping method, which makes it possible to design something easy to remember in learning material. Implementation of the mind mapping method, teaching and learning activities, namely achieving the expected learning objectives, presentation and delivery of material for studying; students will also receive instructions on how to prepare material tools brought from home; students are divided into several groups; students start making mind maps (Erwanda, R. O. D. et al., 2022; Nopiyanti et al., 2016); Make group work presentations in front of the class; and lead teachers and students to express conclusions. This follows the teacher's opinion that the implementation of the mind mapping method is conveying learning themes, preparing facilities and infrastructure that support mind mapping learning, dividing students into several groups, and presenting in front of the class the results of the mind mapping that has been done.

According to the class teacher, the advantages of the mind mapping method contribute to children's understanding of learning material. According to their imagination, students make mind maps so they can understand a subject. This is following research which suggests that the mind mapping method in the teaching and learning process can overcome student learning outcomes because it systematically includes several steps and involves all students in the teaching and learning process (H et al., 2020; Kurniawati, 2022). It is known from the results of interviews with teachers that students are satisfied with applying the mind-mapping method to learning science. Because learning is done through the mind mapping method, students do not only listen to lectures and record teacher explanations, but students can

express their thoughts or ideas in the form of pictures and colors. This shows that applying the mind mapping method can overcome student learning interests. High learning interest usually leads to high learning (Andriani et al., 2014; Slameto, 2015). However, the teacher of grade V at SDN Tobo identified the drawbacks of this mind mapping method if more than 2 hours of lessons are needed because this method takes up a lot of students' time and takes a long time to make. This method takes a lot of time because of the lengthy process (Andriani et al., 2014; Susanti, 2016). Therefore, the teacher must understand what strategies must be prepared to deal with these deficiencies. According to the class teacher, the drawbacks of this method are the difficulty in compiling student mind maps, students being required to be creative so that students can make mind maps, limited knowledge, and insight of students, only active students contribute, and it takes up a lot of time. This is to research (Erwanda et al., 2022). It the difficulty to guide students to build mind maps, and passive students are indifferent and do not participate in groups.

Careful lesson planning influences the process of learning. If lesson plans are well prepared, it will be easier for teachers to convey teaching materials to students and obtain materials. Learning objectives can be qualified, and learning is more focused (Erwanda et al., 2022). The results of interviews found data that teachers at SDN Tobo had learning outcomes problems, namely decreased grades. The decline in student learning outcomes is caused by several factors (Junuarti et al., 2016). And internal factors, i.e., factors that come from within the students themselves, and external factors, namely. Factors that come from outside the student (the student's environment). Then when the teacher explains in front of the class, students tend to get sleepy more quickly and are less focused. This method makes it less scope for children to develop creativity, monotonous situations, does not stimulate students to read, and teachers need help to detect the extent of a child's understanding level (Fatmawati & Rozin, 2018). This causes inadequate learning outcomes.

The problems found to make the teacher have to rack his brain to deal with these problems. To solve this problem, the teacher must pay attention to the things students need and the elements that students like so that the results are more acceptable. Therefore, the teacher uses the mind mapping method because this method uses images and colors that children like. Mind mapping is a creative note-taking technique that makes it easier to remember large amounts of information (Nurrachmawati & Istaryatiningtias, 2022). This states that the application of the mind mapping method has a significant impact on the development of the creative thinking abilities of elementary school students (Acesta, 2020). The best mind maps are colorful and have lots of pictures and symbols that generally look like works of art. The teacher frees up ideas to emerge from within himself. The teacher is a student facilitator in a successful learning activity. The teacher must prepare carefully in the course of learning. A teacher's readiness is a competency possessed by a teacher to be ready to do something. According to Permendikud no. 26 of 2022, Teachers are professional educators whose primary role is to educate, teach, lead, guide, train, assess, and evaluate students in formal, elementary, and secondary education in children's education. The readiness of the class teacher can be seen from the teacher's competence in teaching and handling students in the class (Putri & Ain, 2022; Yusuf et al., 2022).

Based on interviews with researchers regarding the implementation of learning activities at SDN Tobo, the relationship between students and teachers regarding using the mind mapping method is necessary to realize elementary school learning objectives. Where teachers have a significant influence on the success of learning, teachers are responsible for providing subject matter for students to interact with their students when their interactions lead to learning objectives that can be achieved (Erwanda et al., 2022). The form of readiness of the fifth-grade teacher at SDN Tobo in implementing the mind mapping method is knowing essential points in learning material, preparing supporting tools to support student

creativity in mastering basic skills, carrying out the learning process, and measuring student learning outcomes with the correct technique (Erwanda et al., 2022).

4. CONCLUSION

The mind mapping method in overcoming problems in learning outcomes at SDN Tobo is very effective. Because in the interviews, the children before the teacher applied the mind mapping method and after the teacher applied the mind mapping method were very visible. Children are more enthusiastic in the teaching and learning process. Before the teacher applies this method, the child experiences a saturation cycle, resulting in unsatisfactory student learning outcomes. Children's understanding of the material taught using the mind mapping method has increased behavior. The learning atmosphere for children is fun because the mind-mapping method frees children to learn while playing and drawing.

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