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Design and Implementation Process Of Mind Mapping Method In PAI Learning

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ABSTRACT
This study aims to thoroughly describe, analyze, and map the pedagogical design and implementation process of the mind mapping method in Islamic Religious Education (PAI) learning at SD Negeri Pendrikan Lor 01 Semarang. This research employs a qualitative field research methodology with a descriptive-analytical approach. Data collection techniques were systematically carried out through passive participatory observation of classroom dynamics, structured in-depth interviews with PAI teachers and fourth-grade students, and documentation of lesson plans (RPP) as well as students' mind mapping portfolios. The interactive model of analysis by Miles and Huberman was utilized to ensure rigorous data processing. The results show that the implementation of mind mapping is structured into three integrated phases: first, the preparation stage, which involves designing specialized lesson plans and identifying appropriate materials; second, the execution stage, where students collaborate in groups using visual triggers such as colors, branches, and symbols to map the materials; and third, the product-and-process evaluation stage. Integrating this method successfully shifts the learning paradigm from passive memorization to an active-constructivist model, matching the cognitive development of elementary school-aged children.

I. INTRODUCTION

Islamic Religious Education (PAI) at the elementary school (SD) level has a strategic role in building the religious foundation, noble morals, and spiritual intelligence of students from an early age. However, the main challenge that is often faced in PAI learning in the field is the dominance of conventional methods such as one-way lectures that are linear, rigid, and teacher-centered. This approach tends to force students to memorize religious information verbalistically without understanding the essence and meaning behind it. As a result, students often feel bored, bored, and less motivated to participate in learning [1].

In response to this, methodological transformation in PAI learning is an absolute must. Wantini emphasized that PAI teachers in the contemporary era are required to have creativity in designing learning scenarios that are humane, fun, and oriented to student activity. Teachers must act as facilitators who construct meaningful learning experiences, not just as messengers for the transfer of knowledge [2]. The PAI curriculum must be translated dynamically in order to be able to touch the emotional and cognitive aspects of students in a balanced manner [3].

From a neuroscience perspective, Suyadi said that children's learning efficiency is greatly influenced by the balance of stimulation between the left hemisphere (analysis, language, numbers) and the right hemisphere (images, colors, creativity, visuals). Traditional PAI learning that is black-and-white and textual only exploits left-brain function, making students' long-term memory capacity not optimal [4]. Therefore, visual-spatial media and methods are needed that can harmoniously integrate the work of both hemispheres of the brain [5].

One of the innovative methods that is considered very representative to bridge this need is the *mind mapping method* developed by Tony Buzan. This method maximizes the visual potential of the brain by mapping the concepts of the subject matter into the form of an associative network consisting of images, colors, symbols, and keywords [6]. The use of this method is particularly relevant to Jean Piaget's theory of cognitive development, in which elementary school-age children are in a concrete operational phase. Children need concrete visual bridges to understand religious concepts that are originally abstract such as faith, the history of the prophet's struggle, and moral values [7].

Arif Rahman explained that visual learning media plays an important role in making it easier for students to understand religious material that is procedural and narrative [8]. In addition, Yusron Masduki added that joyful learning through image exploration and group collaboration can minimize academic stress in children and improve their memory retention [9]. Based on the context of this thought, this article examines in depth the planning design, implementation process steps, and evaluation model of *the mind mapping* method in PAI learning at SD Negeri Pendrikan Lor 01 Semarang.

II. METHODS

This study uses a qualitative approach with the type of field research. The location of the research is at SD Negeri Pendrikan Lor 01 Semarang. The subjects in this study are PAI teachers in grade IV and all grade IV students totaling 28 children in the even semester of the 2025/2026 school year. The main focus of this study is to fully describe how the process of planning, implementing, and evaluating PAI learning using the mind mapping method [10]. Data is collected directly from the field through three data collection techniques:

1. Passive Participatory Observation: Researchers are physically present in the classroom to carefully observe, record, and record every detail of teacher-student interaction during the mind mapping implementation process, from the introduction, core, to closing activities.
2. In-Depth Interview: Conducted with PAI teachers as instructional design designers to understand the basis for developing learning scenarios, as well as to representatives of grade IV students to explore their psychological responses, constraints, and learning experiences.
3. Documentation: Collect curriculum documents, Learning Implementation Plans (RPPs), student worksheets, assessment sheets, and physical portfolios in the form of mind mapping works made by group students [11].

To maintain the validity of the data, the researcher applied source triangulation techniques (comparing teacher interview data with student interviews and observation results) and triangulation techniques (comparing classroom observations with evidence of lesson plan and portfolio documentation) [12]. Data analysis was carried out by following the interactive analysis model of Miles, Huberman, and Saldana which included three simultaneous flow of activities: data reduction

(selection, concentration, and simplification of raw data), data presentation (arranging information in the form of a structured descriptive narrative), and drawing conclusions or verification [13].

III. RESULTS AND DISCUSSION

The results of the research at SD Negeri Pendrikan Lor 01 Semarang show that the process of implementing the mind mapping method in the subject of Islamic Religious Education (PAI) is designed and implemented systematically through three main stages that are integrated with each other:

Instructional Design Planning Stage

Before entering the classroom, PAI teachers conduct curriculum analysis and subject matter mapping. Teachers choose PAI material that has a high level of complexity, broad conceptual scope, or narrative history to be relevant to be presented in visual form. The materials selected include the material of the Prophet's Exemplary Story, the division of the pillars of faith, and the meaning of the main message of Surah Ad-Duha [14].

Teachers prepare a Learning Implementation Plan (RPP) which explicitly adopts the syntax of the project-based learning model combined with mind mapping techniques. In addition to designing assessment instruments, teachers also prepare physical facilities in the form of blank A3 paper, colorful markers, crayons, and supporting visual teaching materials. The teacher also designed a simple mind map example as an initial stimulator for students.

Stage of Learning Implementation (Syntax of Mind Mapping)

The implementation stage is carried out by dividing teaching and learning activities into the following structured phases:

Learning Phase	Teacher and Student Activities	Duration (Estimated)
Phase 1: Stimulus Delivery	The teacher explained the concept of religious materials in general using a projector. The teacher introduced the basic mind mapping technique through the analogy of a "shady tree".	15 Minutes
Phase 2: Group Formation	Students are divided into small, heterogeneous groups (4-5 students). The group discusses planning the layout and dividing tasks (material finder, branch illustrator, keyword writer, and colorist).	10 Minutes

Phase 3: Mind Mapping Creation	Each group draws a central idea in the center of A3 paper, draws a line of the main branch in a different color, writes the key word on top of the branch, and decorates with relevant illustrative symbols. Teachers go around giving guidance.	50 Minutes
Phase 4: Monitoring and Feedback	Each group showed their draft mind mapping to the teacher to get input on the accuracy of the concept of PAI material before making the final completion.	15 Minutes
Phase 5: Presentation and Evaluation	Each group presented their work in front of the class in turn. Other students responded and the teacher reinforced the religious concept. The work is displayed in the classroom.	30 Minutes

During the creation process (Phase 3), students' activeness and collaboration increased dramatically. A fair division of labor makes every child feel academically responsible. The use of colors and symbolic images is acknowledged by students to make the PAI learning process very enjoyable and no longer boring [15].

Authentic Evaluation Stage

Learning evaluation no longer focuses on the results of written cognitive tests only, but instead applies an authentic assessment system. The teacher comprehensively assesses three aspects of student development:Affective Assessment: Observing the character of mutual cooperation, tolerance, responsibility, and activeness of students when working together in a group. Psychomotor Assessment**:** Assess visual creativity, neatness, use of color variations, and students' skills in pouring hierarchical relationships between concepts on A3 sheets of paper. Cognitive Assessment**:** Measuring the understanding of the material through the accuracy of the religious concepts written in the mind map as well as mastery of the material when presenting it in front of the class.

The design and implementation process of the mind mapping method in Islamic Religious Education (PAI) learning at SD Negeri Pendrikan Lor 01 Semarang was conducted through a structured and systematic learning process. Based on the findings obtained from classroom observations, interviews with teachers, and documentation of learning activities, the application of the mind mapping method showed significant contributions to improving the quality of the learning process. The method was designed not only as a visual learning medium

but also as an instructional strategy to encourage active student participation, conceptual understanding, creativity, and collaborative learning in the classroom.

In the planning stage, the teacher prepared learning instruments carefully before the learning process was implemented. The preparation included developing lesson plans, determining learning objectives, selecting teaching materials, preparing learning media, and designing assessment instruments suitable for the characteristics of elementary school students. The teacher adjusted the learning design to the competencies contained in the curriculum, particularly competencies related to understanding Islamic values, worship practices, moral education, and stories of exemplary figures in Islam. In designing the mind mapping activities, the teacher first identified the main concepts that would become the central themes in the lesson. These concepts were then organized into subtopics and supporting ideas that could be visualized through branches, symbols, keywords, pictures, and colors.

The teacher considered that elementary school students tend to understand learning materials more effectively through visual and interactive approaches rather than through long textual explanations. Therefore, the mind mapping method was chosen because it enables students to connect concepts in a simpler and more organized way. The use of attractive visual elements such as colored markers, drawings, and diagrams was intended to stimulate students' attention and motivation during the learning process. In addition, the teacher prepared examples of simple mind maps before asking students to create their own, so that students could understand the structure and steps of making a mind map correctly.

During the implementation stage, the learning process began with introductory activities conducted by the teacher to build students' readiness and interest in the lesson. The teacher explained the learning objectives and introduced the concept of mind mapping as a learning technique. Students were given explanations about how to determine the main topic, identify important keywords, and connect related ideas through branches and visual symbols. The teacher also demonstrated how to create a simple mind map on the board so that students could observe the process directly.

The classroom implementation showed that students became more actively involved in learning activities compared to conventional lecture-based learning methods. Students participated enthusiastically in identifying important concepts from the lesson materials and transforming them into visual forms. In several learning sessions, students worked individually as well as collaboratively in groups. Group activities encouraged students to exchange ideas, discuss lesson content, and work together in organizing information into structured mind maps. This collaborative atmosphere created a more communicative and interactive learning environment in the classroom.

The findings revealed that students showed high enthusiasm when participating in mind mapping activities because the learning process felt more enjoyable and less monotonous. Students appeared more confident in expressing their opinions and asking questions during the lesson. They

also demonstrated creativity in designing their mind maps by combining colors, images, and symbols according to their own ideas. This condition indicates that the mind mapping method supports the development of students' creative thinking abilities in addition to improving their understanding of learning materials.

From the cognitive aspect, the implementation of the mind mapping method helped students understand PAI materials more comprehensively. Students were able to identify relationships between concepts and organize information more systematically. For example, in lessons related to pillars of faith or stories of prophets, students could classify the main points of the material into interconnected branches, making the lesson easier to remember and understand. The visual representation provided by mind maps enabled students to store information more effectively in their memory because the material was presented in concise and structured forms rather than lengthy textual explanations.

Furthermore, the implementation of mind mapping also had a positive influence on students' learning motivation. The interactive learning atmosphere increased students' interest in participating in classroom activities. Students who were usually passive during lessons became more involved because they were given opportunities to create, discuss, and present their own work. The teacher stated that students became more enthusiastic and focused during PAI learning sessions after the application of the mind mapping method. This finding suggests that innovative learning strategies can reduce boredom and improve students' emotional engagement in the learning process.

The implementation process also demonstrated the important role of the teacher as a facilitator in guiding students throughout the learning activities. The teacher continuously monitored students' progress, provided assistance to students who experienced difficulties, and encouraged students to develop their ideas creatively. In this context, the teacher was not merely a source of information but also acted as a motivator and learning guide who created a supportive classroom environment. The teacher's ability to manage classroom interactions and provide clear instructions became one of the important factors contributing to the successful implementation of the mind mapping method.

However, several challenges were identified during the implementation process. One of the main obstacles was the limited time available for classroom learning. Creating mind maps requires sufficient time because students need to understand the material, organize concepts, and design visual representations carefully. Some students also experienced difficulties in determining keywords and arranging concepts systematically, particularly students with lower academic abilities. In addition, differences in creativity and learning speed among students caused variations in the quality of the mind maps produced. To overcome these challenges, the teacher provided additional guidance and examples for students who required more assistance.

Another challenge was related to the availability of learning facilities and media. Although the school provided basic learning resources, the implementation of mind mapping activities would become more effective if supported by more adequate visual learning tools and materials. Nevertheless, the teacher attempted to maximize the available resources by encouraging students to use simple materials creatively. This condition reflects the importance of teacher innovation in adapting learning methods to existing classroom conditions.

Based on the overall findings, the implementation of the mind mapping method in PAI learning at SD Negeri Pendrikan Lor 01 Semarang can be categorized as effective in supporting active and meaningful learning. The method successfully encouraged students to participate actively, think creatively, and understand lesson materials more deeply. The integration of visual learning strategies in PAI subjects also demonstrated that religious education can be delivered through innovative approaches that are more engaging for elementary school students.

The discussion above confirms that the mind mapping method has significant relevance in improving the quality of PAI learning at the elementary school level. The method not only strengthens students' cognitive understanding but also contributes to the development of communication skills, collaboration abilities, self-confidence, and creativity. Therefore, the mind mapping method can be considered an effective alternative learning strategy for teachers in creating student-centered learning environments and improving learning outcomes in Islamic Religious Education.

IV. CONCLUSION

The design and implementation process of the mind mapping method in PAI learning at SD Negeri Pendrikan Lor 01 Semarang has proven to be effective and implemented systematically. This process goes through three integrative phases, namely careful instructional design planning, structured classroom implementation that encourages collaboration and students' visual creativity, and ends with a holistic authentic evaluation. The application of this method has succeeded in transforming the classroom atmosphere that was initially passive to a very dynamic, fun, and student-centered one, while providing an effective forum for the cognitive development of elementary school-age children.

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