



Improving Social Studies Learning Outcomes through the Visual, Auditory, and Kinesthetic Learning Model: A Classroom Action Research in Madrasah Ibtidaiyah

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ABSTRACT

Purpose of the study: This study aimed to examine efforts to improve fifth-grade students' Social Studies learning outcomes on the location and geographical conditions of Indonesia's major islands through the implementation of the Visual, Auditory, and Kinesthetic (VAK) learning model at MI Tholabiyah Krajan Tegar, Banyubiru, Semarang.

Methodology: This study employed Classroom Action Research conducted in three cycles involving 21 fifth-grade students. Data were collected through learning outcome tests, classroom observations, interviews, and documentation. The research instruments consisted of lesson plans, teacher and student observation sheets, and evaluation tests. Quantitative data were analyzed using IBM SPSS Statistics through descriptive statistical procedures.

Main Findings: The findings showed a progressive improvement in students' learning outcomes across the research stages. The mean score increased from 53.57 in the pre-action stage to 57.14 in Cycle I, 62.85 in Cycle II, and 76.19 in Cycle III. The number of students achieving the learning mastery criterion also increased from 7 students in the pre-action stage to 11, 15, and 18 students across Cycles I, II, and III, respectively.

Novelty/Originality of this study: The originality of this study lies in its contextual application of the VAK learning model to Social Studies learning on Indonesia's major islands in a Madrasah Ibtidaiyah setting. It provides classroom-based empirical evidence of progressive learning outcome improvement across three action cycles and contributes to understanding the practical application of multimodal learning in elementary Social Studies education.

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1. INTRODUCTION

Geography-related learning in elementary education supports students' understanding of places, spatial relationships, and geographical phenomena. Learning about the geographical location and conditions of Indonesia's major islands provides opportunities to connect geographical knowledge with maps, visual representations, and contextual explanations. Spatial skills are relevant to educational learning, yet they require

deliberate attention in classroom instruction [1]-[3]. Geographical thinking involves more than memorizing place names because it includes geographical concepts and higher-order thinking processes [4]-[6]. However, geographical thinking remains conceptualized in different ways across geography education research, creating challenges for classroom implementation and assessment [4], [7], [8].

At MI Tholabiyah Krajan Tegaron, Banyubiru, Semarang, the research problem concerns Grade V students' learning outcomes in Social Studies, particularly the geographical location and conditions of Indonesia's major islands. Initial classroom records showed an average score of 53.57, with seven of 21 students meeting the learning mastery criterion before the intervention. These figures indicate a classroom learning challenge, although they do not independently establish the factors responsible for students' performance. Spatial learning research highlights the importance of opportunities to engage with maps, models, and spatial representations [1], [9], [10]. Nevertheless, geographical content knowledge, spatial skills, and geographical thinking are related but distinct constructs that should not be treated as interchangeable [4], [11], [12].

The Visualization, Auditory, Kinesthetic (VAK) model offers a possible instructional approach by combining visual materials, oral explanations, and practical learning activities. In geographical learning, maps and illustrations can support visual representation, while teacher explanations and peer discussions can provide opportunities to articulate geographical information. Practical activities involving maps, models, or other learning materials may also help students engage with spatial information [1], [13], [14]. These strategies align with the broader need to develop spatial skills through deliberate classroom practice rather than relying exclusively on factual recall [1], [15], [16]. However, varied instructional activities should be distinguished from the claim that teaching must be matched to fixed student learning styles [17]-[19].

Recent research has examined spatial learning, geographical thinking, and the instructional conditions needed to develop these capabilities. McLaughlin and Bailey reviewed spatial interventions in geoscience education and highlighted the importance of investigating spatial learning and instructional strategies [1], [20], [21]. Their review addresses geoscience education rather than the specific teaching of Indonesia's major islands in elementary Social Studies. Bendl et al. reviewed geographical thinking research and identified substantial variation in how the concept is defined and conceptualized across geography education [4], [22], [23]. Research on learning-style matching has also questioned whether matching instructional presentation to presumed learning styles improves learning performance [17], [18].

These studies provide relevant foundations for geography-related instruction, but their primary focus is spatial interventions, geographical thinking, or the learning-style matching hypothesis rather than VAK implementation in a specific Indonesian elementary Social Studies classroom. Spatial intervention research emphasizes the importance of instructional strategies, while geographical thinking research highlights the need to clarify the learning outcomes being investigated [24]-[26]. Evidence concerning learning-style matching also cautions against interpreting VAK as proof that students benefit from instruction tailored to fixed learning-style categories [17], [18], [27]. Accordingly, the present study addresses a contextual and empirical gap by documenting VAK implementation and changes in Social Studies learning outcomes across three classroom action research cycles. These outcomes are examined as learning achievement rather than assumed to represent direct improvements in spatial thinking.

The originality of this study lies in examining the VAK model in Grade V Social Studies learning about the geographical location and conditions of Indonesia's major islands at MI Tholabiyah. Unlike broader reviews of spatial interventions and geographical thinking, this study focuses on instructional practice within a particular Madrasah Ibtidaiyah classroom [1], [4], [28]. It documents the implementation process and changes in student learning outcomes from the pre-action stage through three classroom action research cycles. The study also distinguishes measured Social Studies achievement from spatial and geographical thinking, which are not automatically equivalent constructs [4], [29], [30]. Its contribution is therefore a context-specific account of instructional practice and learning outcomes, rather than a claim to establish a new theoretical model or prove that VAK alone causes improved achievement.

This study is important because classroom-based evidence can help teachers reflect on how varied instructional activities are implemented when teaching geographical content. It aims to describe the implementation of the VAK model in Grade V Social Studies learning about the geographical location and conditions of Indonesia's major islands. It also examines changes in students' learning outcomes from the pre-action stage through three classroom action research cycles. The study addresses two research questions: how was VAK implemented in the classroom, and how did students' Social Studies learning outcomes change across the research stages? By answering these questions, the study seeks to provide contextual evidence for instructional reflection without assuming that its findings can be generalized to all elementary classrooms.

2. RESEARCH METHOD

2.1. Research Design

This study employed a descriptive qualitative research design to examine the social and cultural values embedded in the Saiyyang Pattu'du tradition and their relevance as a Social Studies learning resource at Madrasah Ibtidaiyah DDI Lombo'na. This design was used to describe the tradition and interpret the values identified in the research context

2.2. Research Setting and Participants

The study was conducted at MI Tholabiyah Krajan Tegar, Banyubiru, Semarang Regency, Indonesia, during the 2025/2026 academic year. The participants were 21 fifth-grade students, consisting of 11 boys and 10 girls. The study focused on the implementation of the VAK model in Social Studies learning. The available research information does not specify a formal sampling technique.

2.3. Data Collection and Research Instruments

Data were collected through tests, observations, documentation, and interviews. The research instruments identified in the available materials comprised lesson plans (*Rencana Pelaksanaan Pembelajaran*, RPP), teacher observation sheets, student observation sheets, and evaluation tests. The instruments and their purposes are summarized in Table 1.

Table 1. Research Instruments and Data Collection Focus

Instrument	Focus	Purpose
Lesson plans	Organization of VAK learning activities	Document instructional planning
Teacher observation sheet	Teacher activities during instruction	Record classroom teaching activities
Student observation sheet	Student activities during instruction	Record student participation and classroom activities
Evaluation test	Social Studies content on the geographical location and conditions of Indonesia's major islands	Assess students' learning outcomes
Documentation	Available research and classroom records	Provide supporting research information
Interviews	Information related to the learning process	Supplement information about classroom learning

2.4. Validity and Reliability

The available research information does not sufficiently document formal validity and reliability testing of the instruments. Therefore, no specific validity procedure, reliability coefficient, or instrument-testing result is reported. These aspects should be added only if supporting evidence is available in the original research documentation.

2.5. Data Analysis

Quantitative data on students' learning outcomes were analyzed descriptively using IBM SPSS Statistics. The analysis focused on the mean scores, frequencies, and percentages of students achieving the learning mastery criterion at the pre-action stage and in each of the three research cycles. The percentage of students achieving mastery was calculated by dividing the number of students meeting the criterion by the total number of participants and multiplying the result by 100.

$$P = \frac{f}{N} \times 100\% \quad \dots (1)$$

where P is the percentage of students achieving mastery, f is the number of students achieving mastery, and N is the total number of students. The results were compared descriptively across the research stages to examine changes in classroom learning outcomes. Observation, interview, and documentation data were used as supplementary information concerning the learning process; however, the specific qualitative analysis procedure was not identified in the available materials.

2.6. Research Procedure

The research comprised a pre-action stage followed by three classroom action research cycles. The VAK model was implemented in Social Studies lessons on the geographical location and conditions of

Indonesia's major islands. Students' learning outcomes were assessed at the successive research stages to document changes during the intervention. The available information confirms the three-cycle structure but does not provide sufficient detail to describe every action, observation, and reflection activity within each cycle.

2.7. Ethical Considerations

The available research information does not establish whether formal ethical approval, institutional permission, parental consent, or student assent was obtained. Any statement regarding ethical approval or consent should therefore be included only after verification against the original research documentation.

3. RESULTS AND DISCUSSION

The classroom action research examined students' Social Studies learning outcomes during the implementation of the Visualization, Auditory, Kinesthetic (VAK) model. The research involved 21 fifth-grade students at MI Tholabiyah Krajan Tegar, Banyubiru, Semarang Regency, and consisted of a pre-action stage followed by three cycles. The recorded outcomes comprised the class mean score and the number of students achieving the learning mastery criterion.

Table 2. Students' Social Studies Learning Outcomes Across Research Stages

Research stage	Mean score	Students achieving mastery
Pre-action	53.57	7 of 21
Cycle I	57.14	11 of 21
Cycle II	62.85	15 of 21
Cycle III	76.19	18 of 21

Table 1 shows that the recorded mean score increased across the four research stages. The number of students achieving the learning mastery criterion also increased during the intervention period. These two indicators provide the quantitative findings available for addressing the research question concerning changes in students' Social Studies learning outcomes.

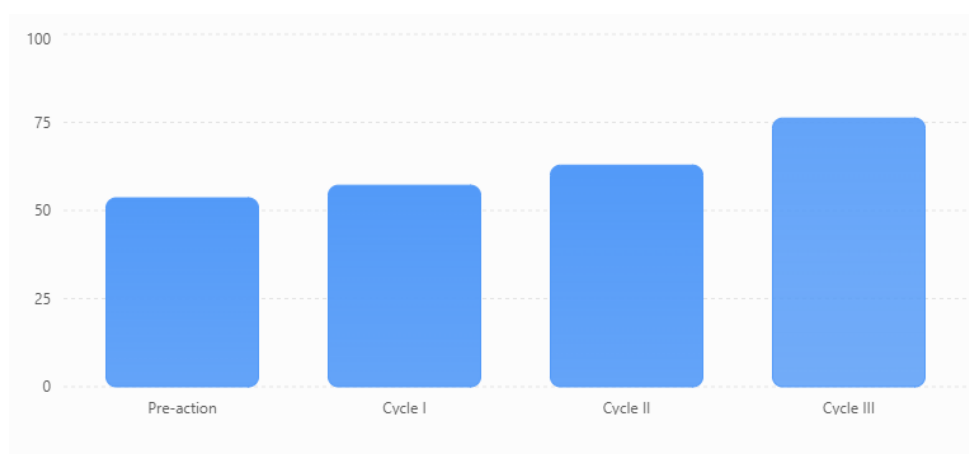


Figure 1. Mean Social Studies Learning Scores Across Research Stages

Figure 1 presents the same mean scores reported in Table 1. The figure makes the pattern across the research stages easier to compare visually. No inferential statistical results are presented because the SPSS output containing such results was not provided.

The first research question concerned the implementation of VAK in Social Studies learning about the geographical location and conditions of Indonesia's major islands. The available information confirms implementation across three classroom action research cycles, but detailed cycle-specific observation findings are unavailable. Therefore, changes in teacher performance, student participation, or classroom interaction cannot be established from the available results.

The principal finding is the consistent increase in the recorded mean score and the number of students achieving mastery across the three research cycles. This pattern indicates that students' learning outcomes changed during the period in which VAK was implemented. However, the available data do not establish which instructional components contributed most to the observed changes. The intervention was not evaluated through a controlled comparison, and the results do not isolate VAK from other influences that may have operated during classroom

action research. Accordingly, the findings support a descriptive conclusion about changes in this class, rather than a definitive causal claim about the effectiveness of VAK.

The geographical content also requires careful interpretation. Research has identified spatial thinking as an important element of geography-related learning, while noting that its development and assessment require explicit attention [1], [4]. In the present study, however, the reported outcome was general Social Studies achievement on a geographical topic. The findings therefore cannot be interpreted as direct evidence of improved spatial reasoning, map skills, or geographical thinking because these competencies were not reported as separately measured outcomes.

The pattern observed in the present study is comparable, in a broad sense, with previous research on varied instructional approaches and geography-related learning. Santhi et al. [31] investigated a VAK model supported by diorama media in elementary Social Studies using a quasi-experimental design. Their study provides a direct comparison because it combines VAK with visual learning resources, although its intervention and research design differ from the present classroom action research. Consequently, the two studies offer related evidence from different instructional contexts rather than identical tests of the same intervention.

Research published by Taylor & Francis and Springer Nature also provides relevant context. McLaughlin and Bailey [1] reviewed spatial interventions in geoscience education and identified mapping, modelling, and other spatial learning activities as important themes. Hickman [32] examined GIS-based interventions and the development and assessment of spatial thinking competencies, while Zhou et al. [33] investigated how visual detail and text load affect knowledge acquisition in geography learning. These studies support the relevance of carefully designed representations and activities, but they do not directly establish the effectiveness of VAK in

the present setting findings also need to be considered alongside research on geographical thinking. Bendl et al. [4] found that geographical thinking is defined and conceptualized in different ways across the literature. This distinction is important because the current study measured Social Studies learning outcomes rather than a separate construct of geographical thinking. Thus, although the topic concerns geography, the available results cannot be used to claim that students developed more advanced geographical reasoning.

Finally, Dinsmore et al. [34] and Hattie and O'Leary [18] caution against assuming that matching instruction to fixed visual, auditory, or kinesthetic learning-style categories improves achievement. Their findings do not imply that visual materials, discussion, or practical activities are inherently ineffective. Instead, they distinguish the use of varied teaching strategies from the unsupported claim that instruction should be matched to a presumed individual learning style. This distinction is relevant when interpreting VAK in the present study: the findings describe learning outcomes during its implementation but do not test the learning-style matching hypothesis.

Overall, the current study adds a classroom-specific account to this literature. Its results are consistent with the broader relevance of varied instructional activities, but differences in populations, interventions, outcome measures, and research designs prevent direct equivalence or strong causal conclusions.

The novelty of this study lies in documenting VAK implementation in Grade V Social Studies learning about the geographical location and conditions of Indonesia's major islands at MI Tholabiyah. The study focuses on a particular Madrasah Ibtidaiyah classroom and follows changes across three classroom action research cycles. Unlike research focused specifically on GIS, spatial thinking assessment, or visual design in geography learning [1], [32], [33], it examines classroom-level Social Studies achievement within this specific instructional context.

The contribution should nevertheless be defined modestly. The study does not introduce a new learning theory, establish the superiority of VAK over other models, or demonstrate a causal mechanism. Its originality is contextual and empirical: it documents how learning outcomes changed during the implementation of VAK for a defined geographical topic in one elementary classroom. This focus adds a local classroom case to the broader literature without claiming that the approach has not been studied previously.

The findings suggest that teachers may consider combining visual representations, oral explanations, and practical learning activities when teaching geographical content. For example, maps, illustrations, guided discussions, and structured classroom tasks may be selected according to the learning objectives and the content being taught. Research on geography learning supports careful consideration of visual representation and the alignment between instructional materials and learning objectives [32], [33].

For assessment, teachers should distinguish factual knowledge about geographical locations from more complex competencies such as map interpretation and spatial reasoning. These competencies require clearly defined learning indicators and appropriate assessment instruments [1], [32].

The present study does not establish that spatial thinking improved, so that outcome should be investigated separately in future research. More broadly, the results offer a basis for classroom reflection rather than a guarantee that VAK will produce similar outcomes in other settings. The findings should be interpreted in relation to the study's specific context. The participants comprised 21 fifth-grade students from one class at MI Tholabiyah, and the research focused on a single Social Studies topic. The results therefore cannot automatically be generalized to other schools, grade levels, geographical topics, or student populations. The classroom action research design also lacked a control group, limiting the ability to attribute the observed changes exclusively to VAK.

Several additional limitations concern the available evidence. Detailed observation results for each cycle were not provided, preventing a systematic comparison of teacher activities and student participation across the intervention. The available information also does not include inferential statistical output from SPSS, so statistical significance cannot be established. Furthermore, the reported assessment focused on Social Studies learning outcomes rather than separately validated measures of spatial thinking or geographical reasoning. Previous research likewise emphasizes the need to define geographical thinking clearly and select suitable assessment approaches [4], [32]. Future studies could examine VAK across multiple classrooms, document implementation more systematically, and include explicit measures of geographical knowledge, map skills, and spatial reasoning. Where feasible, comparative research designs could also help distinguish changes associated with VAK from changes associated with other instructional factors. Such approaches would strengthen the evidence available for evaluating the model beyond the descriptive findings of the present classroom action research.

4. CONCLUSION

The study concludes that the implementation of the Visual, Auditory, and Kinesthetic (VAK) learning model was associated with an improvement in students' Social Studies learning outcomes on the topic of the location and geographical conditions of Indonesia's major islands. The mean score increased from 53.57 in the pre-action stage to 57.14 in Cycle I, 62.85 in Cycle II, and 76.19 in Cycle III, while the number of students achieving the learning mastery criterion increased from 7 to 11, 15, and 18 students, respectively. These findings indicate that the classroom action research cycles were accompanied by progressive improvement in students' learning achievement, thereby addressing the research objective of examining efforts to improve Social Studies learning outcomes through the VAK model. However, because the study involved a single class without a control group, the findings should be interpreted as descriptive evidence within the specific classroom context rather than definitive evidence of a causal effect of VAK. Future research should involve larger and more diverse samples, comparative or experimental designs, and additional measures of geographical and spatial thinking to examine the effectiveness of VAK more rigorously across different elementary and Madrasah Ibtidaiyah learning contexts.

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