

Implementation of Interactive Card Directoral Board Media to Improve Grade IV Students' Understanding of the Card Directoral Concept at State Elementary School 138 Sabajior

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ABSTRACT

Learning science on maps, plans, and cardinal directions requires a good understanding so that students are able to determine the location of a place based on the correct direction. However, based on the results of interviews conducted with fourth-grade teachers of SD Negeri 138 Sabajior, it was found that some students still have difficulty distinguishing north, south, east, and west. In addition, students also often make mistakes in determining the position of a place based on the given map. These problems indicate that students need more interesting and concrete learning media to help understand the concept of cardinal directions. This activity aims to help improve students' understanding of cardinal directions through the application of the Interactive Cardinal Direction Board media. The activity was carried out using a qualitative descriptive method. Data collection techniques were carried out through interviews, observation, and documentation. The subjects of the activity were 20 fourth-grade students of SD Negeri 138 Sabajior, with a total of 11 students in attendance. The application of the media was carried out through material delivery activities, media introduction, media use practice, group discussions, worksheet worksheets, and making simple maps. The results of the activity showed that the use of the Interactive Cardinal Direction Board media had a positive impact on the learning process. Students appeared more active, enthusiastic, and understood the concept of cardinal directions more easily than before. Furthermore, they demonstrated improved abilities in locating locations based on cardinal directions and reading simple maps. Therefore, the Interactive Cardinal Direction Board can be used as an effective alternative learning tool to help improve elementary school students' understanding of cardinal directions.

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INTRODUCTION

Education is a crucial aspect of human life, playing a role in shaping students' thinking abilities, skills, and character. Through education, students are expected to acquire a variety of knowledge that can be used in everyday life (Saputra, 2024). At the elementary school level, the

learning process focuses not only on mastering theoretical concepts but also emphasizes concrete understanding appropriate to the students' developmental stage (Saputra, 2024). Therefore, teachers are required to create engaging, meaningful, and student-centered learning to optimally achieve learning objectives.

In the Independent Curriculum, science and science learning is a subject that integrates various natural and social science concepts relevant to students' lives. Maps, floor plans, and cardinal directions are among the topics studied in fourth grade (Fatimah et al., 2025). This material plays a crucial role because it relates to students' ability to understand the location of a place, determine travel directions, read floor plans, and understand the relationships between spaces in the surrounding environment. Understanding the cardinal directions also forms the basis for students in studying more complex geography material at the next level of education (Anisah et al., 2023).

Although the concept of cardinal directions is frequently encountered in everyday life, many students still struggle to grasp the concept (Hidayati et al., 2024). This difficulty is typically seen when students are asked to name the cardinal directions, determine the location of a location based on a specific direction, or read a simple map. Some students frequently confuse east with west, or north with south. This situation hinders students' comprehensive understanding of maps and maps (Wisudawati & Sulistyowati, 2022).

Based on initial observations and interviews at SD Negeri 138 Sabajior, several issues related to students' understanding of the cardinal directions were identified. Interviews with the fourth-grade teacher, Ibu Suci Wulandari, S.Pd., were conducted to obtain information about the classroom learning environment. The interviews revealed that some students still had difficulty distinguishing between north, south, east, and west. Furthermore, students frequently made errors when asked to locate a location based on the directions provided.

The teacher explained that during the learning activities, some students were able to memorize the names of the cardinal directions, but did not yet understand how to use them to determine the location of a place. When given questions or exercises related to floor plans, students often gave incorrect answers because they did not yet understand the relationship between the cardinal directions and the location of a location. This difficulty indicates that students had not received enough concrete learning experiences to help them grasp the concept of cardinal directions in depth.

Another problem identified was students' poor ability to connect learning material to their surroundings. Some students were unable to explain the location of their homes, schools, mosques, or other public places based on the cardinal directions. When the teacher posed simple questions about the location of a place, most students still showed hesitation in answering. This condition indicated that students' conceptual understanding was still at the rote level and had not yet reached the stage of applying it to everyday life.

Based on interviews, it was also discovered that the previous learning process had primarily utilized lectures and explanations from textbooks. While these methods helped convey material, they did not fully provide concrete learning experiences for students. At elementary school age, students tend to understand material more easily when presented through media that can be seen, touched, and used directly. Therefore, learning innovations are needed that can help students grasp the concept of cardinal directions in a more realistic and enjoyable way.

The characteristics of elementary school students, who are still at the concrete operational stage, require teachers to use learning media appropriate to their developmental level (Aluf & Sutiah, 2024). Students understand a concept more easily if they gain direct experience through practical activities. The use of learning media is an alternative that can help teachers deliver material more effectively. Learning media not only functions as a teaching aid but can also increase student interest, motivation, and participation during the learning process (Ali et al., 2024).

In addition to difficulty distinguishing cardinal directions, it was also found that some students still experience difficulties connecting the concept of direction to their surrounding environment. When asked about the location of a house, school, mosque, or market based on the cardinal directions, most students were unable to provide a correct answer. Some students relied solely on estimates without understanding the actual direction. This indicates that students' understanding of the concept of cardinal directions remains theoretical and cannot yet be applied in everyday life.

This situation is a crucial concern because material on cardinal directions is fundamental to understanding maps and floor plans. If students don't understand the cardinal directions well, they will have difficulty with subsequent material related to location determination, map reading, and spatial relationships. Therefore, learning efforts are needed that can help students understand the concept of direction more concretely so they can not only memorize it but also apply it in various situations.

Based on interviews with fourth-grade teachers, it was discovered that students actually exhibit a high level of learning interest when engaging teaching aids or media are used. However, in previous lessons, the use of learning media was limited, resulting in students not receiving a maximal learning experience. Teachers stated that students understand material more easily when they can see, touch, and directly practice the concepts being studied. Therefore, the use of learning media is crucial in helping students understand the material on cardinal directions.

Learning that relies solely on lectures often leads to student passivity. In certain situations, students simply listen to the teacher's explanation without actively participating in the learning process. As a result, the understanding gained is less profound and easily forgotten. Conversely, when students are directly involved through practical activities and the use of learning media, they tend to grasp the concepts more easily because they gain real-world learning experiences (Suhirman et al., 2026).

Learning media plays a crucial role in helping teachers convey abstract material in a more concrete way. For elementary school students still in the concrete operational development stage, the use of learning media is essential for a more effective learning process (Anjarani et al., 2020). Through learning media, students can observe, experiment, and discover for themselves the concepts being studied (Kusumawati & Prastiwi, 2025). Thus, learning is not solely teacher-centered but also provides opportunities for students to actively construct their own understanding.

According to constructivism theory, students construct their own knowledge through the learning experiences they acquire during the learning process. Knowledge is not only transferred directly from teacher to student but is also formed through interactions with the environment and their experiences (Azzahra et al., 2025). Therefore, learning that involves hands-on activities, the use of media, and exploration is crucial to helping students understand concepts more deeply (Syafila & A'yun, 2024).

In science and science learning, the use of instructional media is one factor that can support the success of the teaching and learning process (Isa & Rustini, 2023). Instructional media function as intermediaries that help convey messages or information from the teacher to students, making the material easier to understand. The use of appropriate media can help reduce the abstract nature of material and make it more concrete for elementary school students (Karomah et al., 2024).

The topic of cardinal directions is one that requires visualization skills and spatial understanding (Nurrahmadani et al., 2026). Spatial ability is a person's ability to understand position, direction, distance, and the relationships between objects in a space (Hasanah & Kumoro, 2021). This ability needs to be developed from elementary school age because it plays a crucial role in helping students understand their surroundings and facilitating their reading of maps, plans, and directions (Faridah & Muzakki, 2024).

Furthermore, learning using interactive media can increase student motivation (Purnomo et al., 2025). Interactive media provides opportunities for students to be directly involved in the learning process, enabling them to become not only listeners but also actors in the learning process (Sawitri et al., 2024). This active involvement can increase students' curiosity, concentration, and enthusiasm for learning throughout the learning process.

The use of innovative learning media also aligns with the demands of the Independent Curriculum, which emphasizes student-centered learning (Arifudin & Firmansyah, 2025). In this curriculum, students are encouraged to actively seek, discover, and develop knowledge through a variety of meaningful learning experiences (Pane et al., 2025). Therefore, the use of the Interactive Cardinal Directions Board is expected to be a tool that supports the creation of active, enjoyable learning that is tailored to the needs of elementary school students.

To address the identified issues, the authors designed and implemented an Interactive Cardinal Direction Board. This tool was designed to help students identify north, south, east, and west more easily through engaging and interactive learning activities. This tool allows students to directly participate in determining the direction and location of a location based on the instructions provided (Reffiane et al., 2025). With this direct involvement, students are expected to better understand the concept of cardinal directions than through verbal explanations alone.

The Interactive Cardinal Direction Board was chosen because it is easy to use, engages students, and provides a more concrete learning experience (Aini et al., 2024). This tool is expected to help students grasp the concept of cardinal directions more easily than through verbal explanations alone. Furthermore, it can encourage students to actively participate in learning activities, making the learning environment more enjoyable and meaningful (Prasetyo et al., 2026).

The use of the Interactive Cardinal Direction Board is also expected to improve students' spatial thinking skills. Spatial thinking skills are the ability to understand the position, direction, distance, and relationships of objects in space. This ability is crucial because it helps students understand their surroundings and facilitates their learning of materials related to maps, plans, and geography at subsequent levels of education. By improving spatial thinking skills, students are expected to be able to locate places more accurately and confidently (Afifah et al., 2023).

Furthermore, the use of interactive media can create a more enjoyable learning environment. Students not only listen to teacher explanations but also engage in various learning activities such as observing, discussing, experimenting, and presenting their work (Adnan, 2025). An active and enjoyable learning environment is believed to increase student motivation, thus optimally achieving learning objectives (Irawan, 2022).

This activity was conducted with fourth-grade students at SD Negeri 138 Sabajior, with 20 students and 11 in attendance. The activity began with problem identification through interviews with class teachers, followed by planning and implementing the Interactive Cardinal Directions Board in science lessons on maps and floor plans. Throughout the activity, students demonstrated a high level of interest in the media used and actively participated in each stage of the learning process.

Based on all the problems identified at SD Negeri 138 Sabajior, it can be concluded that students' difficulties in distinguishing cardinal directions and determining the location of a place require more innovative learning solutions tailored to the characteristics of elementary school students. Therefore, the use of an Interactive Cardinal Direction Board is seen as an alternative that can help improve students' understanding of the cardinal directions. Through this visual, concrete, and interactive medium, it is hoped that students will learn more actively, have a pleasant learning experience, and be able to grasp the concept of cardinal directions better than before.

Therefore, the goal of this activity is to help fourth-grade students at SD Negeri 138 Sabajior understand the concept of cardinal directions, improve their ability to determine the location of a place based on a specific direction, and facilitate students' reading and creation of simple plans. Through the implementation of the Interactive Cardinal Direction Board, it is hoped that the learning process will be more effective, engaging, and meaningful, thus positively impacting student learning outcomes both in the classroom and in everyday life.

IMPLEMENTATION METHOD

This activity employed a qualitative descriptive method. This method was used to describe the conditions encountered in the field and the process of implementing the Interactive Cardinal Direction Board in science learning on maps and floor plans.

The activity was conducted at SD Negeri 138 Sabajior, with 20 fourth-grade students as subjects, while 11 students were present during the activity. Data collection techniques included interviews, observation, and documentation. Interviews were conducted with the fourth-grade teacher, Mrs. Suci Wulandari, S.Pd., to determine the challenges students experienced in understanding the cardinal directions. Observations were conducted throughout the learning process to assess student participation and understanding, while documentation was used to support the data from the activities.

The activity stages included problem identification through interviews, preparation of learning media, implementation of learning using the Interactive Cardinal Direction Board, and evaluation of the results. The data obtained were then analyzed descriptively to determine changes in student understanding after the use of the learning media.

RESULTS

1. Interview Results

Before the learning activities began, the author conducted an interview with the fourth-grade teacher at SD Negeri 138 Sabajior, Mrs. Suci Wulandari, S.Pd., at SD Negeri 138 Sabajior. The interview was conducted to determine the challenges students faced in science learning, particularly regarding maps, floor plans, and cardinal directions.

Based on the interview results, it was discovered that several students still had difficulty distinguishing north, south, east, and west. Furthermore, students often made errors when determining the location of a place based on the cardinal directions on the map. Some students were able to name the cardinal directions, but did not yet understand how to use them to determine the position of a location. This situation caused students to lack confidence when working on assignments related to maps and floor plans.

The class teacher also explained that previous lessons had largely used explanations from textbooks and blackboards, thus preventing students from gaining concrete learning experiences. Therefore, learning media were needed that could help students understand the material on cardinal directions more easily and engagingly.

2. Implementation of the Interactive Cardinal Direction Board

The learning activity was conducted with fourth-grade students at Sabajior 138 Public Elementary School. Of the total 20 students, 11 attended.

The activity began with greetings, a group prayer, attendance check, and the presentation of the learning objectives. The author then provided an apperception session by asking several questions about maps, floor plans, and cardinal directions to assess students' prior knowledge.

In the main activity, the author explained the map and floor plan material using simple images familiar to the students. The author then introduced the Interactive Cardinal Direction Board to the students. The author explained its function and how to use it to identify north, south, east, and west.

The students were enthusiastic when the board was first used. They took turns pointing to the requested cardinal directions and answering the questions. After understanding the cardinal directions, the students were given an example of locating a location using a simple map.

Next, the students were divided into small groups and given a worksheet to work on together. In this activity, students were asked to locate a location using the cardinal directions and to read the simple map provided. During the discussion, students were actively asking questions and collaborating with their group members.

The next activity involved practicing creating a simple map of the surrounding environment, taking into account the correct cardinal directions. Upon completion, several students presented their

work to the class. The activity concluded with reflection, summarizing the material, and assigning assignments.

Based on observations during the activity, the use of the Interactive Cardinal Direction Board had a positive impact on the learning process. Students appeared more active, more willing to answer questions, and more easily understood the cardinal directions compared to before using the tool.

3. Activity Documentation



Figure 1. Interview with a Grade IV Teacher at SD Negeri 138 Sabajior

The activity began with an interview with the fourth-grade teacher, Mrs. Suci Wulandari, S.Pd., to obtain information about the learning conditions in the classroom, specifically regarding maps, floor plans, and cardinal directions. The interview revealed that several students still had difficulty distinguishing north, south, east, and west. Furthermore, students often made mistakes when determining the location of a place based on the cardinal directions on the floor plan. The information obtained from this interview served as the basis for determining the learning solutions that would be implemented for the students.



Figure 2. Presentation of Map and Floor Plan Material

In the initial stage of the lesson, the author presented material on maps and floor plans to students. This activity aimed to provide a basic understanding before students learned about the cardinal directions. The material was presented using simple images and examples relevant to students' daily lives. Throughout the activity, students appeared to be paying close attention to the explanation, and several students actively answered questions. This activity helped students

understand the relationship between maps, floor plans, and the cardinal directions in determining the location of a place.



Figure 3. Introduction to the Interactive Cardinal Direction Board

After delivering the material, the author introduced the Interactive Cardinal Direction Board to the students. At this stage, students were given an explanation of the media's function and how to use it to identify the directions north, south, east, and west. Students were enthusiastic because the media used had an interesting format and differed from the lessons they usually receive. The media introduction was carried out in stages so that all students understood how to use it correctly before entering the practical activities.



Figure 4. Student Media Use Practic

In this activity, students were given the opportunity to use the media directly. They were asked to point to the cardinal directions mentioned by the teacher and to determine the location of a location based on the directions given. The practical activity proceeded smoothly, and students appeared enthusiastic while using the media. Through hands-on practice, students were able to grasp the concept of cardinal directions more easily than simply listening to a verbal explanation. This activity also helped them remember the cardinal directions better.

After practicing using the media, students were divided into small groups to work on the prepared worksheets (LKPD). In this activity, students were asked to read simple maps and determine the location of a location based on the cardinal directions. During the discussion, students actively exchanged ideas and collaborated with their group members. Several students who had previously struggled began to show improved understanding after receiving help from their group mates and

guidance from the teacher. This discussion also fostered students' communication and collaboration skills.



Figure 5. Group Photo of Teacher and Students

The final documentation is a group photo of the author, the class teacher, and the students after the entire series of activities were completed. This photo demonstrates the successful implementation of the Interactive Cardinal Direction Board. Overall, the activity ran smoothly and received a positive response from both students and the class teacher. Students appeared to enjoy participating in the learning process and demonstrated an increased understanding of the cardinal directions. The class teacher also expressed appreciation for the use of the media, believing it helped students understand material previously considered difficult.

In addition to improving student understanding, the use of this media also helps develop students' spatial thinking skills. Students become more able to determine the position of a place based on the cardinal directions and are better able to read simple maps. This ability is one of the essential skills students need in everyday life (Damayanti et al., 2025).

Overall, the implementation of the Interactive Cardinal Direction Board has yielded positive results in science learning, particularly in maps and maps. This media can be used as an engaging and effective learning alternative to help students understand the cardinal directions and determine the location of a place more precisely.

DISCUSSION

Based on the results of the activities carried out, the use of the Interactive Cardinal Direction Board has been proven to help students understand the concept of cardinal directions. Before the activity, some students still had difficulty distinguishing north, south, east, and west. After the media was implemented in the learning process, students seemed to remember the cardinal directions more easily because they could see and practice them directly.

In the author's opinion, the success of this media is due to its simple, engaging, and easy-to-use characteristics for elementary school students. Through this media, students not only listen to the teacher's explanation but also directly participate in the learning activities. Active student involvement makes the learning process more meaningful and helps them understand concepts that were previously considered difficult.

Throughout the activity, students demonstrated high enthusiasm for the learning process. This was evident in their active participation in answering questions, experimenting with the media, discussing with groups, and presenting their work. Learning involving interactive media can create a more enjoyable learning environment, thus increasing student motivation. The results of this activity align with research conducted by (Kurniawan et al., n.d.), which states that the use of interactive learning media can improve elementary school students' conceptual understanding and

learning engagement. This research shows that media that involve direct student participation can help them understand learning material better than teacher-centered learning methods.

This finding is also supported by research (Lestari et al., 2026), which explains that the use of visual media in science lessons can increase students' learning interest and help them understand abstract concepts. In this activity, the Interactive Cardinal Direction Board serves as a visual aid that helps students understand the cardinal directions concretely, making them easier to remember.

In addition to improving student understanding, the use of this media also helps develop students' spatial thinking skills. Students become more able to determine the position of a place based on the cardinal directions and are better able to read simple maps. These abilities are essential skills needed in everyday life (Damayanti et al., 2025).

Overall, the implementation of the Interactive Cardinal Direction Board has positive results in science lessons covering maps and maps. This media can be used as an interesting and effective learning alternative to help students understand the cardinal directions and determine the location of a place more precisely.

CONCLUSION

Based on the results of activities conducted in the fourth grade of SD Negeri 138 Sabajior, it can be concluded that students still experience difficulty distinguishing the cardinal directions (north, south, east, and west), and determining the location of a place based on a map. This problem was identified through interviews with the fourth grade teacher, who stated that some students still frequently make errors in determining the direction and position of a location.

To address this issue, an Interactive Cardinal Direction Board was implemented in science lessons on maps and maps. The media was implemented through activities to introduce the cardinal directions, practice using the media, group discussions, worksheets (LKPD), and create simple maps. Throughout the learning process, students demonstrated high enthusiasm and actively participated in each activity.

The results showed that the use of the Interactive Cardinal Direction Board helped students understand the concept of cardinal directions more easily. Students became more able to correctly name the cardinal directions, determine the location of a place based on directions, and read simple maps better. In addition to improving student understanding, this media also created a more engaging, active, and enjoyable learning environment.

Thus, the Interactive Cardinal Direction Board can be an effective alternative learning tool to help elementary school students understand the cardinal directions, maps, and floor plans. The use of engaging media that directly engages students has been proven to support the learning process, enabling them to achieve their objectives more effectively.

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