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Implementation of a Cut-and-Paste Activity-Based LKPD for Comparing and Ordering Numbers in Grade 2

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Abstract

Mathematics instruction in the early grades of elementary school needs to be adapted to the characteristics of learners, who require concrete learning experiences and direct involvement in activities. This study aims to describe the implementation of an interactive cut-and-paste activity-based student worksheet (LKPD) on the topic of comparing and ordering numbers among second-grade elementary school students. A qualitative descriptive approach was employed, involving 28 second-grade students of SDN Sawojajar 6, Malang City, with data collected on 12 March 2026. Data were gathered through observation, interviews, and documentation, and were analyzed descriptively and qualitatively through the stages of data collection, data reduction, data display, and conclusion drawing. The results show that the implementation of the interactive cut-and-paste LKPD could be carried out systematically through both group and individual activities, and was able to provide concrete learning experiences that actively engaged students in cutting, arranging, matching, and pasting number cards. Students displayed enthusiasm throughout the activities, and most were able to complete the number comparing and ordering tasks accurately. Challenges identified included some students requiring more time to complete the tasks and an uneven distribution of responsibilities within groups; these could be addressed through teacher guidance and direction during the learning activities. Overall, the cut-and-paste activity-based interactive LKPD can serve as an alternative, concrete, and engaging mathematics learning activity that supports the involvement of second-grade elementary school students.

Keywords: interactive student worksheet; cut-and-paste activity; number comparing; number ordering; elementary school mathematics

1. Introduction

Students in Grade 2 may experience difficulties when learning to compare numbers, particularly when they are required to determine which number is greater than, less than, or equal to another number . Although students may recognize and write numerical symbols, some students still need concrete experiences to understand the relationships represented by these symbols (Li et al, 2020). This condition was observed during learning activities with Grade 2 students at SDN Sawojajar 6 Malang, where students showed different levels of understanding when comparing numbers through conventional written tasks. In contrast, students demonstrated greater enthusiasm and involvement when they were asked to cut, arrange, match, and paste number cards as part of the learning activity (Ezekwe, 2025). The students did not only observe numerical symbols or write answers but also directly manipulated learning materials to identify and compare numbers. However, the implementation of these activities also revealed several challenges, including differences in the time required to complete cutting and pasting tasks, students' need for guidance during the activity, and unequal participation during group work (David & Weinstein, 2024). These conditions indicate that learning to compare numbers requires activities that provide concrete

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experiences while also guiding students through systematic and manageable learning steps (Firman & S, 2024).

The need for concrete learning experiences is consistent with the cognitive characteristics of Grade 2 students. According to Piaget's theory of cognitive development, children approximately between seven and eleven years old are in the concrete operational stage, in which they begin to use logical thinking but still rely on concrete objects and observable experiences when understanding concepts Piaget (Aisyah et al, 2025). At this stage, students are more likely to construct mathematical understanding when abstract concepts are connected to objects or actions that they can directly observe and manipulate (Juneda et al, 2025). This characteristic is particularly important in learning to compare numbers because numbers are represented through abstract symbols that cannot always be understood meaningfully through verbal explanations or written exercises alone (Hayati et al, 2025) Students need concrete representations, such as number cards or other manipulable objects, to connect numerical symbols with quantities and relationships that can be directly observed (Muhammad Feri Prasnanda, 2025). Through manipulating concrete representations, students can gradually recognize which number is greater than, less than, or equal to another number before expressing the relationship using mathematical symbols (Syamsiani, 2022). Therefore, learning to compare numbers should provide opportunities for students to move from concrete experiences toward the understanding of abstract numerical representations (Zahwa & Syafi'i, 2022).

One approach that can support this learning need is manipulative or hands-on learning, which involves students directly interacting with learning materials to construct their understanding through physical and meaningful activities (Hikmah et al, 2025). In learning to compare numbers, manipulatives can provide visible and tangible representations that allow students to identify, arrange, and compare numerical values through direct action (Rosmayanti et al, 2026). Cutting, arranging, matching, and pasting number cards can encourage students to actively examine numerical symbols and establish relationships between numbers rather than simply memorize comparing rules. Hands-on learning can also increase students' participation because students are involved in performing learning tasks rather than only receiving information from the teacher (Naitboho et al, 2025). However, hands-on activities require appropriate instructional guidance because students may have difficulties understanding the sequence of activities, determining what they need to do, or managing their roles during collaborative tasks. In this context, a LKPD can serve as an instructional scaffold by providing clear instructions, examples, activity sequences, and guided tasks that support students throughout the learning process. Interactive LKPD can organize students' activities while maintaining opportunities for active participation and direct interaction with learning materials (Latifah et al, 2026). Nevertheless, previous studies have tended to examine LKPD or manipulative-based activities separately, with limited attention to the integration of structured cut-and-paste activities and instructional scaffolding specifically for learning to compare numbers among Grade 2 students (Sari et al, 2026). Furthermore, concrete activities may still present implementation challenges when students have different levels of motor skills, require different amounts of time, or need varying degrees of teacher assistance. Thus, an instructional material is needed that combines concrete manipulation with systematic guidance to support students in learning to compare numbers.

Based on these considerations, the implementation of an interactive cut-and-paste activity-based LKPD can provide a practical learning approach for supporting Grade 2 students in learning to compare numbers. The LKPD can integrate clear and sequential instructions with interactive cut-and-paste activities that require students to identify, compare, arrange, and paste number representations according to the given tasks. Through these activities, students can directly manipulate numerical representations and connect abstract number symbols with concrete learning experiences. The instructional structure of the LKPD can also provide scaffolding by guiding students from identifying numbers to determining their relationships through progressively organized activities. This approach allows concrete manipulation and instructional guidance to work together, enabling students to participate actively while receiving the support needed to complete each learning stage. Therefore, this study focuses on the implementation of an interactive cut-and-paste activity-based LKPD for comparing and ordering numbers in Grade 2 as an instructional approach that integrates concrete, hands-on experiences with structured learning guidance.

2. Method

This study employed a qualitative descriptive approach, which aims to describe in detail and in depth a learning phenomenon as it naturally occurs in the field, without applying an experimental treatment that compares control and experimental groups (E. Y. Putri et al., 2023). This approach was chosen because the study focused on describing the natural implementation process of an interactive cut-and-paste activity-based LKPD in mathematics learning within the classroom. Data collection and the learning implementation were carried out on 12 March 2026 at SDN Sawojajar 6, Malang City, involving 28 second-grade students. The learning implementation addressed the topic of comparing and ordering numbers up to 100, using an LKPD consisting of both group and individual versions. During the group activity, students were divided into small groups, each led by a group leader responsible for helping distribute tasks so that the activity could proceed more smoothly. Students carried out the activities of cutting, arranging, matching, and pasting number cards according to the instructions, and subsequently presented their group's work. Following this, students completed the individual LKPD independently through similar activities, after which a joint discussion and learning evaluation were conducted.

Research data were collected through observation, interviews, and documentation. Observation was used to examine student activity and engagement during the use of the LKPD, while interviews were conducted with students as a form of learning reflection to obtain information on their experiences of, and responses to, the cut-and-paste activity. Documentation in the form of the LKPD, student work, photographs of the learning activities, and PPT media served as supporting data. Data were analyzed descriptively and qualitatively through the processes of collection, reduction, display, and conclusion drawing in order to develop a comprehensive picture of the implementation process of the interactive cut-and-paste activity-based LKPD in mathematics learning (E. Y. Putri et al., 2023).

3. Results and Discussion

The implementation of learning using the interactive cut-and-paste activity-based LKPD with 28 second-grade students of SDN Sawojajar 6, Malang City, proceeded according to the planned stages. Learning began with an introduction to the topic, after which students worked

on the LKPD in groups under the guidance of their group leader. After completing the task, each group presented its results in front of the class. Students then proceeded to the individual LKPD once the group LKPD had been completed. The lesson concluded with a joint discussion and the completion of an evaluation consisting of ten questions. Although instructions were already provided within the LKPD, the teacher still gave a direct explanation before the activity began to ensure that students understood the steps required. For example, in the group LKPD on ordering numbers, students cut out the available numbers, arranged them in sequence, and then pasted them into the provided columns. These stages collectively demonstrate that the cut-and-paste LKPD design can be implemented systematically within a single learning session.

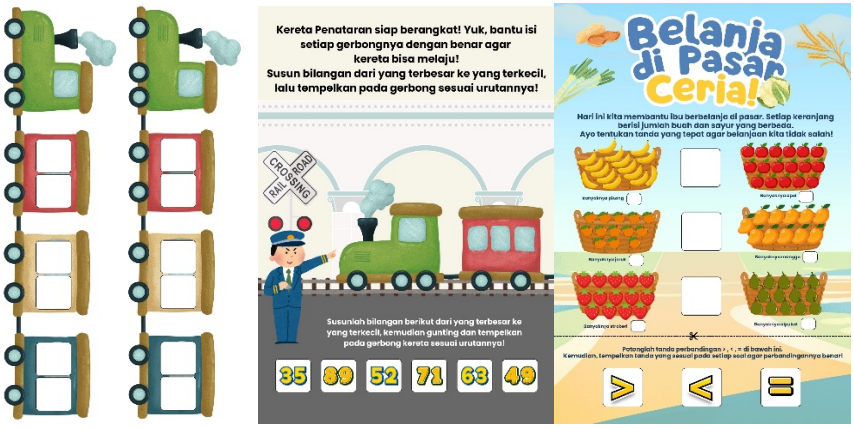


Figure 1. Group Student Worksheet

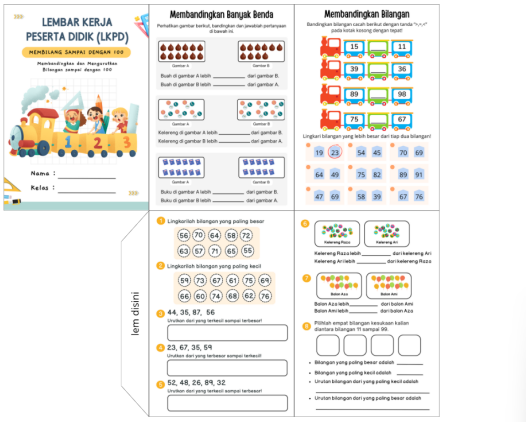


Figure 2. Individual Student Worksheet

The use of both group and individual LKPD provided distinct yet complementary learning experiences. During the group activity, students collaborated to order and compare numbers, while the group leader helped distribute tasks so that the work could be completed more quickly and efficiently. After gaining experience through the group activity, students completed the individual LKPD independently to reinforce their own understanding. This combination of the two LKPD formats allowed students to build understanding collaboratively before completing tasks independently, so that the process of knowledge construction occurred gradually. This finding is consistent with the study by N. K. W. R. Putri et al. (2026), which showed that an interactive LKPD can foster student engagement in structured mathematical problem-solving. Firmansyah et al. (2025) similarly found that a project-based

interactive LKPD can help students understand concrete content. A study by Nabila (2024) showed that a traditional-game-based mathematics LKPD was able to increase the participation of second-grade students. These three studies align with the present study in their use of an LKPD as a means of actively engaging students, while the present study is distinguished by its cut-and-paste activity, which allows students to interact directly with the learning objects.

Throughout the activity, students demonstrated a high level of enthusiasm, both while working on the group and the individual LKPD. They appeared eager to follow the instructions given, such as cutting out cards, arranging numbers, and pasting the results in the appropriate places. This activity provided a more concrete learning experience, as students not only wrote down numbers but also interacted directly with the learning materials while engaging their fine motor skills. This finding is consistent with the study by Yuliana and Damayantin (2025), which showed that scrapbook-based pasting media can increase the engagement of lower-grade students. Oktaviani et al. (2024) likewise found that scrapbook-based activities can foster the enthusiasm of second-grade students by involving enjoyable physical activity.



Figure 3. Group and Individual Student Worksheet Activities

Students' ability to compare numbers was also reflected in the results of the LKPD and the post-lesson evaluation sheet. Most students were able to accurately determine the relationship between numbers after engaging in the number-cutting activity. The process of holding, moving, and arranging numerals provided a more tangible experience for students in understanding comparing symbols. In addition to the ability to compare numbers, the ability to order numbers showed similarly favorable results. In the group LKPD, all groups were able to complete the activity correctly. This result indicates that all 28 students (100%) successfully completed the group task in accordance with the given instructions. The group activity provided students with opportunities to discuss, compare answers, and assist one another in determining number relationships and sequences. The group leader also helped allocate tasks so that the activities of cutting, arranging, matching, and pasting number cards could be carried out collaboratively. This indicates that the use of a cut-and-paste activity-based LKPD can serve as an appealing alternative learning activity for lower-grade students.

After completing the group LKPD, students worked on the individual LKPD to assess each student's individual understanding. The results showed that most students were able to complete the activity independently and satisfactorily. However, 3 of the 28 students (10.7%) still exhibited misconceptions in determining the symbols >, <, and =. A closer look at these

three students' work showed that the error did not stem from an inability to judge which of the two numbers was larger, but rather from reversing the orientation of the > and < symbols: the students could correctly identify the larger and smaller number, yet placed the symbol facing the wrong direction relative to that comparison. This indicates that the misconception was procedural rather than conceptual—students understood the numerical relationship itself but had not yet consistently mastered which way the symbol should open toward the larger value, a difficulty commonly found among lower-grade students because the two symbols are visually near-mirror images of one another. Although students had gained experience through the number-card cutting and arranging activity in the group setting, that activity focused primarily on ordering numbers by magnitude rather than on practicing the directional placement of the > and < symbols, so some students still required additional reinforcement to connect number values with the correct orientation of the symbols >, <, and =. After the individual LKPD was completed, the teacher conducted a joint discussion of students' answers. At this stage, errors in the use of the symbols >, <, and = were revisited, with explanations provided regarding the relationship between the values of the two numbers. The three students who had previously shown misconceptions were able to follow the discussion and demonstrated improved understanding after receiving the explanation.

Student understanding was further assessed through an evaluation consisting of 10 items. Based on the evaluation results, the average score of the 28 students was 90. This result indicates that after completing the sequence of learning activities—group LKPD, individual LKPD, and joint discussion—students were able to complete the evaluation with favorable outcomes. The average score of 90 also indicates that students' understanding of the material on comparing and ordering numbers improved following the series of learning activities. Although 3 students were found to have misconceptions regarding the symbols >, <, and = during the individual LKPD, the joint discussion provided an opportunity for students to identify and correct these errors prior to completing the evaluation. This was further evidenced by the final evaluation scores of the 3 students who previously experienced misconceptions; all three successfully achieved scores above the passing grade (80, 90, and 90), confirming that the joint discussion effectively eliminated their conceptual errors.

Although the learning objectives were achieved, the implementation of learning using this LKPD also encountered several challenges. Some students required more time to cut and paste the paper, while task distribution within groups was not entirely even. In several groups, the group leader still required guidance to ensure that each member received a share of the task. This condition is reasonably expected, given that second-grade students are still at the concrete operational stage, with fine motor skills and group-management abilities that are still developing. Suroto (2024) explains that lower-grade students still require teacher guidance because their cognitive and motor abilities are still developing. Pefriani (2026) likewise emphasizes the importance of teacher facilitation in group learning that uses manipulative media, so that student engagement can occur more evenly.

In practice, the teacher addressed these challenges by circulating and monitoring the activities of each group in turn. The teacher not only observed the progress of the activity but also provided direction to group leaders regarding task distribution, so that every member could be involved in completing the LKPD. When a group experienced difficulty or had not yet understood the steps of the activity, the teacher provided direct explanation and assistance according to students' needs. This facilitation helped students understand the tasks they

needed to carry out while also encouraging cooperation among students within groups. With direct monitoring and guidance, the learning activity was able to proceed in a more orderly manner, and students became more focused in following each stage of the LKPD activity. In addition, the teacher's presence throughout the activity helped reduce student confusion and ensured that each group could complete its task within the allotted time.

4. Conclusion

Based on the results of the learning implementation, the use of an interactive LKPD based on cut-and-paste activities can be systematically implemented in mathematics instruction on the topic of comparing and ordering numbers in second grade. Activities comprising group LKPD, individual LKPD, joint discussion, and evaluation were able to provide a gradual learning experience, progressing from collaborative activity to independent understanding. The activities of cutting, arranging, and pasting number cards also increased student engagement and enthusiasm, as they provided a concrete learning experience while involving motor activity. The evaluation results showed an average score of 90 among the 28 students, while in the group LKPD activity, all students (100%) were able to complete the task correctly. These findings indicate that a cut-and-paste activity-based LKPD can support student understanding of the material on comparing and ordering numbers.

Nevertheless, the implementation of the LKPD still faced several challenges, particularly in students' cutting and pasting skills and in the uneven distribution of tasks within groups. In addition, 3 of the 28 students (10.7%) were found to still have misconceptions in the use of the symbols >, <, and = during the individual LKPD. These challenges can be addressed through direct teacher facilitation and monitoring, particularly in providing direction to group leaders, ensuring the involvement of every member, and reinforcing concepts that students have not yet understood. Thus, the use of an interactive LKPD based on cut-and-paste activities can not only help achieve learning objectives but also provide an active, concrete, collaborative, and enjoyable learning experience for second-grade students.

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