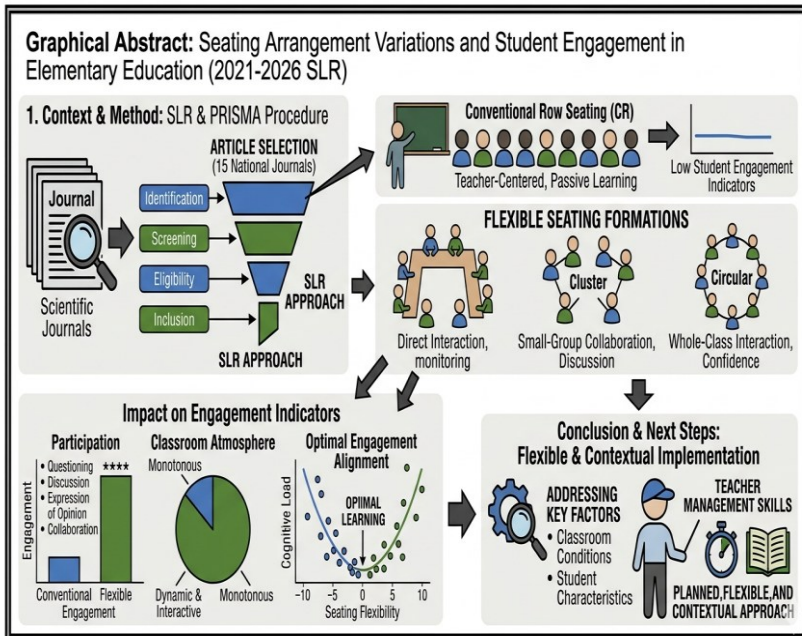


# Seating Arrangement Variations and Student Engagement in Elementary Education: A Systematic Literature Review

## Graphical Abstract



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This manuscript is categorized as a Review Article using a Systematic Literature Review (SLR) approach

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## Seating Arrangement Variations and Student Engagement in Elementary Education: A Systematic Literature Review

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### ABSTRACT

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#### Keywords

1. Seating arrangement,
2. Student engagement,
3. Elementary school,
4. Classroom management,
5. Learning environment

**Background:** This study investigates the impact of seating arrangement variations on student engagement within the elementary education context. While traditional layouts have long been the norm, there is a growing need to understand how spatial configurations can foster a more active learning environment. This research aims to synthesize existing evidence to determine how different classroom setups influence student participation and interaction.

**Methods:** A qualitative approach using a library research method was employed. The study synthesized 15 relevant national scientific articles published between 2021 and 2026. Data were harvested from academic databases, including Google Scholar, with a specific focus on classroom management and learning environments. The selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol, while the data were analyzed using thematic analysis to identify patterns and core findings across the literature.

**Results:** The findings indicate that flexible seating arrangements—such as small-group clusters, U-shaped, and circular formations—significantly outperform conventional row seating in fostering student engagement. These layouts enhance classroom interaction, encourage active discussion, and facilitate peer collaboration. Results suggest that a flexible physical environment creates a more dynamic and interactive atmosphere, which is essential for young learners.

**Conclusion:** The study concludes that while flexible arrangements offer substantial benefits, their effectiveness is moderated by learning objectives, student characteristics, and the teacher's classroom management proficiency. Therefore, seating variations should not be static; they must be implemented in a planned, flexible, and contextual manner. Optimizing student engagement in elementary classrooms requires a strategic alignment between the physical layout and the specific pedagogical goals of the lesson.

## Introduction

A high-quality learning process in elementary school is not determined solely by the quality of the curriculum, teacher competence, or instructional materials, but is also significantly influenced by the physical conditions and learning environment within the classroom. One aspect of the learning environment that is often overlooked by educators is the arrangement of student seating or classroom layout. In fact, seating arrangements have a direct correlation with students' interaction patterns, levels of concentration, and engagement during the learning process (Saputro, 2021).

Student engagement is one of the most important components of the modern student-centered learning paradigm. Engaged students tend to grasp the material more easily, have higher motivation to learn, and are able to develop critical and collaborative thinking skills. Conversely, students who are passive and less involved in the learning process tend to struggle to achieve the expected competencies (Diyanti & Winahyu, 2025). Therefore, teachers need to implement various strategies to encourage student engagement, and one strategy that can be implemented without significant cost is varying seating arrangements.

In elementary schools, monotonous classroom settings with conventional seating arrangements—such as straight rows facing the blackboard—still dominate. While this arrangement is easy to manage, it tends to position the teacher as the sole source of information (teacher-centered) and limits peer interaction. Such conditions create a learning environment that is not conducive to fostering student engagement, as students simply sit quietly listening to the teacher's explanations without many opportunities to actively participate in the learning process (Siti, 2025).

Various studies have shown that classroom layout arrangements influence students' behavior and learning participation. According to Noviana et al. (2021), varied seating arrangements can create a more dynamic learning environment, encourage student interaction, and boost students' confidence in expressing their opinions. Similar findings were reported by Safitri et al. (2025), who stated that variations in seating arrangements significantly influence students' levels of engagement and participation in classroom discussions.

Common seating arrangements used in classrooms include the traditional (row-column) arrangement, the U-shape or horseshoe arrangement, small-group (cluster) arrangement, circle arrangement, and chevron or herringbone arrangement. Each arrangement has its own advantages and disadvantages and is suitable for

different learning objectives. Group arrangements, for example, are well-suited for discussion and teamwork activities, while circle arrangements are more effective for whole-class discussions (Syawalia et al., 2025).

Student engagement in the context of elementary school education encompasses a variety of indicators, including: the frequency of asking and answering questions, participation in group discussions, the ability to express opinions, and the willingness to collaborate with peers. These indicators are closely related to the physical and social conditions of the classroom, including how student seating is arranged and managed by the teacher (Fauziyah, 2024). Thus, a teacher's ability to utilize various seating arrangements is an important pedagogical competency to master.

Psychological aspects also play a role in the relationship between seating arrangements and student engagement. Learning environment theory states that the physical conditions of the classroom influence students' psychological states, including a sense of safety, motivation, and comfort in learning. Students who feel comfortable with their learning environment tend to participate more actively in learning (Mendrofa et al., 2026). In this context, seating arrangements that support positive interactions among students can create a classroom climate conducive to active learning.

The developmental aspects of elementary school-aged children must also be considered when selecting seating arrangements. Children aged 6–12 are in the concrete operational stage, during which they learn most effectively through direct experience, interaction with peers, and manipulation of concrete objects. Seating arrangements that facilitate peer interaction and collaborative activities are highly suitable for the developmental needs of elementary school-aged children (Handayani, 2025).

The Zone of Proximal Development (ZPD), proposed by Vygotsky, is also relevant to this discussion. The ZPD theory states that children can achieve higher learning potential through interaction with peers or more competent individuals. Seating arrangements that support student interaction, such as group formations or U-shaped formations, can facilitate the occurrence of the ZPD in the learning process (Damanik et al., 2025).

Teachers play a central role in determining the seating arrangement that best suits the learning context. Teachers' decisions regarding seating arrangements should be based on several considerations, including: the learning objectives to be achieved, the teaching methods or strategies to be

used, student characteristics and needs, and the physical conditions of the classroom. By taking these factors into account, teachers can select and implement the most optimal seating arrangement to enhance student engagement.

This study is important because there is still a limited body of research specifically addressing variations in seating arrangements in the context of elementary schools in Indonesia and their relationship to student engagement. Most existing research focuses more on learning methods or strategies, while the aspect of physical classroom arrangement, particularly seating arrangements, has received insufficient attention in the Indonesian educational literature. This study is expected to contribute to a more comprehensive understanding of the role of seating arrangements in enhancing student engagement in elementary schools.

## Research Methode

This study employed a qualitative approach using a literature review design. The purpose of this study was to examine the effect of seating arrangement variations on student engagement in elementary education based on findings from previous studies. The data used in this study were secondary data obtained from relevant scientific journal articles discussing classroom management, learning environment, seating arrangements, and student engagement in elementary schools.

The articles were collected through academic databases such as Google Scholar and other educational journal sources using keywords including "seating arrangement," "classroom layout," "student engagement," "classroom management," and "elementary school." The article selection process followed the PRISMA procedure, including identification, screening, eligibility, and inclusion stages.

The inclusion criteria in this study were:

1. Articles published between 2021 and 2026.
2. Articles discussing seating arrangement variations and student engagement.
3. Studies conducted in elementary school settings.
4. Relevant national scientific journal articles.

Meanwhile, articles that were not related to classroom seating arrangements, student engagement, or elementary education were excluded from the analysis. A total of 15 journal articles were selected and reviewed in this study.

## Results and Discussion

Based on an analysis of various relevant literature sources, it appears that variations in seating arrangements have diverse effects on the

engagement of elementary school students. These effects are evident not only in increased student participation but also in the quality of their involvement in the learning process. In several of the studies analyzed, changes in seating arrangements were found to alter interaction patterns within the classroom—both among students and between students and teachers—thereby leading to increased learning engagement (Putri et al., 2022).

The findings indicate that classes employing flexible seating arrangements tend to exhibit more dynamic learning environments compared to those using fixed arrangements. Students in classes with varied seating arrangements are more frequently engaged in discussions, question-and-answer sessions, and group work. Additionally, they also tend to be more active in responding to the material presented. This indicates that seating arrangements can facilitate the creation of a learning environment that encourages student participation more effectively (Rahmawati & Suryadi, 2021). In the context of group learning, the results of the analysis indicate that small-group formations contribute significantly to increased interaction among students. Students placed in groups tend to find it easier to exchange ideas and help one another understand the material. However, the level of participation within groups is not always consistent. Some students take on more dominant roles, while others tend to be passive and merely follow the flow of the discussion. This situation indicates that the success of group formation is determined not only by seating arrangements but also by the teacher's ability to manage group dynamics and ensure the involvement of all members (Wahyuni et al., 2023).

In addition to group seating arrangements, the study's findings also indicate that the U-shaped arrangement has a positive impact on classroom interaction. In this arrangement, students are positioned in a way that allows them to interact directly with both the teacher and their peers. This leads to increased student participation in question-and-answer sessions and makes it easier for the teacher to monitor student engagement during the lesson. However, implementing this formation often faces challenges due to classroom space limitations, so it cannot always be implemented optimally. Meanwhile, the circle formation shows a positive trend in fostering more equitable participation among students. In several studies, students in this formation showed increased confidence in expressing their opinions and were more active in participating in class discussions. However, the use of the circle formation also has limitations, particularly in lessons requiring the centralized use of visual aids, such as a whiteboard or projector. This can reduce the effectiveness of material

delivery if not balanced with appropriate teaching strategies.

In addition to student factors, the teacher's role is also one of the key factors determining the success of implementing varied seating arrangements. Teachers who are able to manage the classroom effectively, provide clear instructions, and create a conducive learning environment tend to be more successful in increasing student engagement. Conversely, if classroom management is suboptimal, changes in seating arrangements can actually have negative effects, such as increased noise or decreased student focus. Therefore, teachers' skills in managing the classroom are a crucial aspect in supporting the effectiveness of this strategy. Other findings indicate that varied seating arrangements also influence the learning atmosphere within the classroom. Classes that implement varied seating arrangements tend to have a more interactive and less monotonous atmosphere, thereby increasing students' interest in learning. Students appear more enthusiastic about participating in lessons and more engaged in various activities. This indicates that seating arrangements not only affect student engagement but also the overall quality of the learning experience (Hidayati et al., 2025).

Overall, the results of this study indicate that varying seating arrangements hold significant potential for increasing student engagement in elementary schools. However, their effectiveness depends on various supporting factors, such as the instructional strategies employed, student characteristics, and teachers' classroom management skills. Therefore, the implementation of varied seating arrangements should be planned, flexible, and tailored to learning needs in order to achieve optimal results.

## Conclusion

Variations in seating arrangements have a positive impact on student engagement in elementary classrooms. Flexible seating formations such as small-group, U-shaped, and circular arrangements encourage classroom interaction, discussion, collaboration, and active participation compared to conventional row seating. However, the effectiveness of each seating arrangement depends on learning objectives, classroom conditions, student characteristics, and teachers' classroom management skills. Therefore, seating arrangement variations should be implemented flexibly and contextually to create an active and conducive learning environment in elementary education.

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