REVIJA ZA ELEMENTARNO IZOBRAŽEVANJE
JOURNAL OF ELEMENTARY EDUCATION
Vol. 18, No. 3, pp. 287–304, September 2025

A Study of Classroom Potential Based on Elementary School Students' Seating Position Preferences

Kukuh Rizki Satriaji, Imam Santosa, Achmad Syarief & Andriyanto Wibisono

Visual Art and Design, Faculty of Art and Design, Institut Teknologi Bandung, West Java, Indonesia
Visual Art and Design, Faculty of Art and Design, Institut Teknologi Bandung, West Java, Indonesia

Corresponding author/Korespondenčni avtor
kukuh.satriaji@itb.ac.id

Potrjeno/Accepted
31. 7. 2025

Objavljeno/Published
30. 9. 2025

Abstract/Izvleček

Previous research has shown a link between seating position and student interest in and motivation for learning. This study explores classroom potential based on seating preferences and reasons behind student choices. Teachers rarely allow students to select their own seats, despite the benefits of comfort and engagement. Conducted in 5th and 6th elementary grades, this research used a participatory approach involving students and teachers. The study found that students' seating preferences were influenced by spatial characteristics, opportunities for social engagement, and academic motivations. Understanding these preferences can help create a more conducive learning environment, enhancing student comfort, participation, and overall academic motivation.

Raziskava o učnem uspehu osnovnošolcev glede na sedežni red v razredu

Dosedanje raziskave so pokazale povezavo med sedežnim redom v razredu in zanimanjem ter motivacijo učencev za učenje. V študiji raziskujemo učni uspeh učencev glede na njihovo izbiro sedežev v razredu in razloge za izbiro. Učitelji redko dovolijo učencem, da si sami izberejo, kje bodo sedeli, kljub prednostim, kot sta udobje in vključenost pri pouku. V raziskavi, izvedeni v 5. in 6. razredu osnovne šole, je bil uporabljen participativni pristop, ki je vključeval učence in učitelje. Ugotovitve so pokazale, da so na izbiro sedežnega reda vplivale prostorske značilnosti, možnosti za socialne stike ter učna motivacija. Razumevanje teh učenčevih želja lahko pripomore k oblikovanju spodbudnejšega učnega okolja, ki izboljšuje udobje, sodelovanje in splošno učno motivacijo učencev.

Keywords:
teaching, school, student, learning process, peer feedback.

Ključne besede:
poučevanje, šola, učenec, učni proces, vrstniška povratna informacija.

UDK/UDC:
373.3.091.3

DOI https://doi.org/10.18690/rei.5010

Introduction

Research and discussion to enhance the quality of education persist through the exploration of learning elements and environments that effectively motivate students. Research in the education domain emphasizes the development of innovative learning approaches alongside the augmentation of teacher capacity and motivation in the teaching process (van der Lans et al., 2021), measurement of student motivation and perception (Allen et al., 2021), to the development of activities and facilities in classrooms (Stewart et al., 2019). Changes in the education system, whether in pedagogy, management, or policy, do not always align with adaptation to the learning environment (Barrett et al., 2015). By providing proper facilities, motivating students, and employing skilled teachers with effective methods, an education system actively shapes the future character of individuals. The school serves as a controlled environment where students simulate real-world societal scenarios, contributing to their overall development (Weinstein and David, 1987). Students improve through the development of literacy skills (Gul and Ozdemir, 2023), critical thinking, responsibility, and environmental awareness (Hendrizal et al., 2022). An effective classroom environment plays a critical role in cultivating these abilities by directly influencing students. Thus, a thorough understanding of the factors that enhance classroom quality is imperative (Sutton et al., 2021).

It is widely believed that students possess a strong motivation to learn and aim for the best possible outcomes. The first day of school marks an exciting start to their educational path. This motivation is driven by an intrinsic desire to acquire knowledge and engage with new learning experiences (Ardiyanto and Muharam, 2021). However, this motivation is often diminished by several factors, including the following: (1) monotonous learning environments; (2) limited social interaction; (3) difficulty in understanding the learning materials; and (4) inadequate school facilities. Schools should provide opportunities for students to maintain their motivation by participating in diverse and engaging learning activities. A lack of creativity and innovation in classroom management, including seating arrangements, can lead to boredom and disengagement from the learning process (Rohmanurmeta and Farozin, 2016). Teachers are responsible for maintaining the physical environment of the classroom (Purnomo and Aulia, 2018) so that they can always provide new experiences for students. Schools shape fundamental behaviour by teaching respect for others and balancing personal comfort with shared spaces, ensuring designs align

with student needs (Kliment, 2001). The school building provides various functions, such as the education and exploratory functions, recreation and social functions, as a provision for future preparation (Spencer and Blades, 2005).

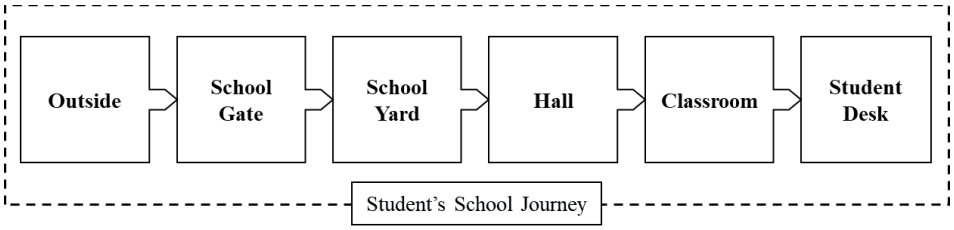

Figure 1.
Student's school journey

A student's journey from outside into the classroom involves transitioning through various areas, each governed by its own set of rules and expectations (Figure 1). At first, students are free to play and explore; however, as they approach the classroom, rules become increasingly strict. In the hallways, running and shouting are prohibited. Inside the classroom, students are expected to remain in their assigned seats during designated times. Movement is limited, and those sharing seats are required to avoid behaviours that could disrupt their peers.

The nature of elementary students is characterized by their active and joyful disposition, as they eagerly engage in uninhibited exploration and movement (Kytta, 2004). For them, every object holds unlimited exploration potential. However, there are strict classroom rules prohibiting noisy or dirty activities. The system confines most activities within assigned seats, while students view games and exploration as integral to their learning experience.

Student desks are important elements in a classroom because they can provide atmosphere in a learning environment (Valikhani et al., 2016). The duration students spend in their seats varies, determined by the established seating system. Some systems change dynamically every day, while others remain fixed for the semester. There are no standard guidelines for arranging classroom furniture (Saidi et al., 2023). Spending about 30-40 hours weekly at their desks, students need a well-designed room that supports learning. Classroom furniture should allow movement and align with students' motor abilities, following ergonomic and anthropometric principles (Domljan et al., 2010). Problems that occur in the design of student desks include the following: the design not being in accordance with student ergonomics

and anthropometry (Herga and Fošnarič, 2017); conditions that are no longer suitable for use, and using materials that are too heavy (Purwaningrum et al., 2015). Standard table heights for Indonesian elementary students range from 70-72.5 cm, while chair heights are 37-42 cm, ensuring ergonomic support based on student anthropometry (Satriaji et al., 2020). These dimensions are based on average student anthropometry, although physical variations do exist. However, some schools still use outdated wooden tables and chairs. The relationship between the seating position and the classroom elements is something that has rarely been further examined. It is suspected that it can provide value in the learning process at school (Wannarka and Ruhl, 2008). This study examines the influence of the classroom elements on student preferences for classroom seating position. Moreover, it can influence elementary school students' motivation to learn in class. Seating position must be considered because, apart from being a personal choice (Tobia et al., 2022), most of the time students spend at school is in their seats.

Several variations of seating arrangements in the classroom include traditional classroom style, herringbone style, face to face style, cluster style, seminar style, and horseshoe style. These seating arrangement model has the best academic impact (Rogers, 2020) because students can see one another, which supports better social interaction. Most schools in Indonesia use conventional seating with chairs and tables in a grid for up to 38 students. Heavy furniture limits flexibility, while curriculum and teaching methods rarely support varied layouts. Seating comfort depends on ergonomics, anthropometry, and safe, practical furniture that enhances learning and well-being. Learning activities in the classroom include listening, reading, taking notes, discussing, chatting, and asking questions (Pirih, 2019). Several improvements to learning activities can be carried out to increase motivation among elementary school students to study in the classroom (Bojović and Antonijević, 2017). The activity in the classroom must be tailored to the characteristics of the student so that the student can feel engaged (Table 2). Learning activities carried out should be supported by varied learning methods while ensuring optimal utilization of classroom elements in the space where these activities take place. A good learning strategy will facilitate the achievement of learning objectives (Wahyuningsih et al., 2023).

Then how to determine student seating? One common occurrence is the struggle for a seat position on the first day of school, which often becomes a competition among parents. Some still believe that "position determines achievement," often preferring their child to sit in the front row for a better grade, while back-row seats

are associated with lower academic performance. The class teacher can implement various seat selection systems based on thoughtful consideration (Table 1). Student seating arrangements often follow a conventional style owing to a lack of awareness about alternative layouts. Seating can be adjusted dynamically based on thematic learning, teaching methods, and subject content to enhance student engagement and classroom interaction (Wardana and Rulyansah, 2019).

Table 1.
Type of student seating selection

Type	Description	Implementation
First come, first served	Seats are chosen based on arrival order	Early-arriving students select their seats, often resulting in hierarchical group dynamics
Health Considerations	Seats assigned based on student health needs	Visual or hearing-impaired students prioritized to sit in the front row
Seat rotation	Seats periodically moving	Students experience different seating arrangements, implemented on a daily or weekly basis
Physical factors	Seating based on students' physical characteristics, such as height	Shorter students are placed in front, while taller students are seated in the back to ensure visual access
Gender	Seating organized according to student gender	May involve grouping students of the same or different genders at a single table

Schools must support the expected learning outcomes by providing security, cleanliness, safety, and a conducive environment (Fauziati, 2016). Classrooms must be able to organize learning activities properly according to the methods used. Learning outcomes are influenced by both internal factors—such as physiological and psychological conditions (Che Ahmad et al., 2017)—and external factors, including curriculum design, teaching methods, social relationships, school discipline, learning support tools, and the physical condition of school buildings (Raresik et al., 2016). Key considerations include adequate space, safety, flexible furniture, sufficient storage, and compliance with educational standards to optimize the learning experience (UNICEF, 2016).

Based on the background outlined above, this research has two aims:

1. To understand students' seating preferences and the reasons behind their choices.
2. To identify classroom potential from the student's perspective to enhance learning experiences and engagement.

Methods

This study explores classroom potential by analysing students' seating preferences and the reasons for their choices. Building on prior research, it examines how physical classroom elements influence learning and aims to optimize the learning environment. Student seating preferences vary according to individual backgrounds. This study was conducted at SDN 03 Kepongpongan, Cirebon, involving 44 students from the 5th and 6th grades, selected through purposive sampling. All participants had prior classroom experience and received approval from the school to take part in the study. The data will be analysed using a heat map diagram to visualize the distribution and patterns of seating preferences within the classroom.

Table 2.
Classroom activities

Activities	Location	Description
Curiosity-driven activities	Student desk	Activities stimulate student curiosity by connecting daily events to the subject matter
Learning materials simulation	Centre of the class	Simulate the teaching material provided adjusted to student learning outcome
Group study	Group configuration desk	Group discussion to solve a problem, providing opportunities for students to convey and listen to opinions from peers.
Direct learning assessment	In front of the class	Teacher conveys the outcomes for each stage of learning openly and describes the strategy to achieve the parameters of success. Praise can be given by the teacher to students during the process to increase morale.
Physical activities	All areas	Learning activities not limited to seats but include simple movements around the classroom.
Integrating indoor-outdoor activities	Classroom-Schoolyard	Learning can incorporate outdoor phenomena, like vehicle sounds, weather, scents, and motion. These experiences enhance understanding and support students' physical development (Joyce et al., 2023)
Game based activities	Classroom	Learning fosters a competitive spirit among students while creating a dynamic learning environment. This enhances engagement and helps address learning challenges effectively (Katemba et al., 2022)
Quizzes	All areas	Aligning quiz content with the curriculum while fostering healthy competition among students.

This qualitative study investigates elementary students' seating preferences in relation to existing classroom conditions. The research was conducted in three stages: data collection, workshops, and analysis. Methods employed include surveys, observations, and interviews, utilizing measurement sheets and seating identification tools. Interviews were conducted to assess student engagement and learning experiences to better understand classroom dynamics and optimize the learning environment. In the initial stage, the study examined classroom attributes and orientation, including the extent of outdoor visibility. Measurements of classroom dimensions, furniture, and openings were carried out using both laser distance meters and manual measuring instruments.

Figure 2.
Existing classroom conditions

This data forms the basis for digital drawings using SketchUp creating a simplified 3D classroom model for the workshop sheet (Figure 2). The drawing closely represents actual classroom conditions. Students begin by identifying the classroom elements. Each seat is coded with letters and numbers, where letters indicate columns and numbers denote rows. For example, A1 and B1 represent seats at the front left near the teacher's desk, while C1 and D1 are central front seats. The classroom's grid-based layout allows easy coding, helping students identify seating arrangements. This structured approach enhances workshop engagement and helps analyse seating preferences effectively.

Table 3.
Classroom elements

Classroom Area	Elements
Front area	Blackboard, Garuda Pancasila (Indonesia national emblem), photo of Indonesia President and Vice President, information board, learning poster, teacher table
Left- or right-side area	Windows, information boards, learning posters, entrance, decoration
Rear area	Cabinet, unused table or chair
Middle area	Student chair and desk configurations

Observations reveal that elementary school classrooms have common features and elements (Table 3). Seating often follows a traditional grid layout, with rows and columns oriented toward the blackboard and teacher. Each desk holds two students, accommodating 38 students per class. Workshop images were simplified for clarity. The student worksheets (Figure 3) and instruction in Indonesian (L1) used simple wording during the workshop. This was a collaborative activity between students and teachers. Teachers remained present but did not influence student choices, ensuring authentic responses that reflected true seating preferences. The teachers guided students, addressed difficulties, and leveraged their familiarity with individual learning styles.

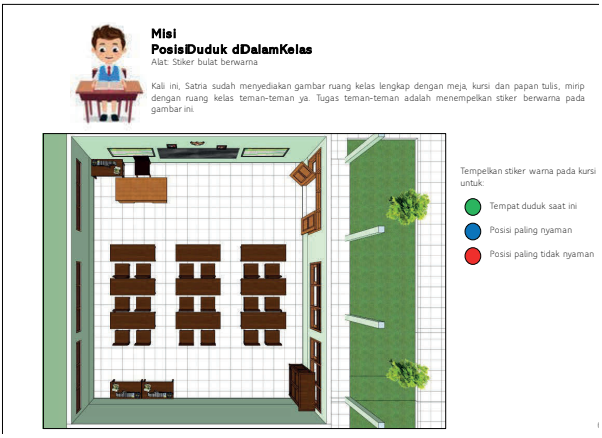

Figure 3.
Student seating worksheet

In the initial stage, students observed their classrooms from their respective seats. They were provided with worksheets and three coloured stickers—green (indicating

their current seat), blue (their most preferred seat), and red (their least preferred seat). Primary colours were deliberately selected to enhance engagement and comprehension among elementary students. This activity not only explored their seating preferences but also assessed their spatial awareness and understanding of classroom layout. The perceived potential of the classroom is closely linked to specific interior elements, particularly those that influence student comfort and engagement (see Table 4). Four key elements were assessed: the teacher's desk (T), the blackboard (B), the classroom door (D), and the window (W). Each element was categorized based on its proximity to student seating positions: very close, close, far, very far, or extremely far. These classifications considered not only physical distance but also the presence of potential obstructions—such as furniture or classmates—that might hinder students' physical or visual access to these elements

Table 4.
Classroom seating position identification

Row	Left Side (A & B)	Middle (C & D)	Right Side (E & F)
Front Row (1)	Very close to T	Close to T	Far from T
	Close to B	Very close to the B	Close to B
	Far from D	Close to D	Very close to D
	Very far from W	Close to W	Very close to W
Middle Row (2)	Close to T	Far from T	Very far from T
	Far from B	Close to B	Far from B
	Very far from D	Far from D	Close to D
	Very far from W	Close to W	Very close to W
Back Row (3)	Far from T	Very far from T	Very very far from T
	Very far from the B	Far from B	Very far from the B
	Very very far from D	Very far from D	Far from D
	Very far from W	Close to W	Very close to W

Results and Discussion

Students' Optimal Classroom Position

The results revealed that students selected their favourite seating positions based on classroom conditions within the learning environment. Three positions were considered attractive by students: B1, C1, and D1 (Figure 4). Seating position number D1—the middle front row near the blackboard—emerged as the most favoured, chosen by 28.57% of students. The front-row, fourth-column seat provides a clear view of the blackboard, enabling students to follow lessons more

effectively and engage directly with the teacher. Its proximity to the classroom entrance also offers quick access, prompting some students to compete with their peers to secure this favoured position. The popularity of this seat reflects students' naturally competitive tendencies (Hofer, 2007).

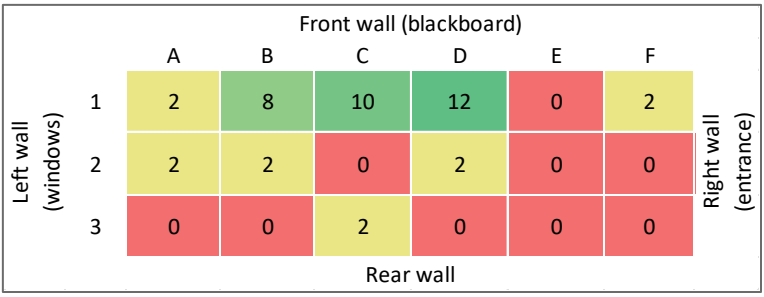

Figure 4.
Student's preferred position distribution

The second is C1, chosen by 23.8%, and located adjacent to D1 in the first row and third column. This position offers advantages similar to D1, facilitating effective communication. The third is B1 at 19.04%, situated in the first row of the second column, directly across from the teacher's desk. This position enhances student-teacher interaction during lessons. These results suggest that elementary school students exhibit a tendency to opt for seats in the front row, prioritizing proximity to the blackboard and the teacher's desk—the key elements capturing their attention in class. The similar distribution of the remaining results at 4.76% is evident in seating numbers A1, F1, A2, B2, D2, and C3. The predominant seating preference is observed in the front row (A1 to F1) with a massive percentage of 80.8%. Students prefer seats near the teacher's desk, the blackboard, and the entrance, indicating a tendency towards the front. This preference is likely influenced by clearer teacher communication, proximity to the class focus, and easy outdoor access, making front-row seating a motivating factor in their learning experience. On the other hand, the most favoured elongated seating distribution is in the middle column (C1, D1, D2, C3) for 61.7% of students. This choice is perceived as offering an equitable opportunity to enjoy all classroom features, given the symmetrical arrangement typical of most classrooms

Students' Less Optimal Classroom Position

Among the less desirable choices, 11 seating positions are considered unattractive by students: A1, B1, F1, A2, B2, A3, B3, C3, D3, E3, and F3 (Figure 5). Seat number B1, located in the front row near the teacher's desk, is the least favoured selected by 22.72% of students. Being directly in front of the teacher's desk, this position could make some students feel discomfort due to heightened scrutiny and expectations of increased participation in class discussion. The perceived limitation on engaging in alternative activities also contributes to the unfavourable perception of this seating position. This finding contrasts with its also being the students' third most favoured position, indicating a nuanced preference for this location. The second least preferred seating position is number A3, positioned in the first column in the back row. Students find this location unattractive as it is in the back left corner of the classroom, offering limited accessibility and fewer opportunities to engage with class features. This position holds an option rate of 13.63% like seating position number E3, situated in the back row in the right corner. These findings underscore students' reluctance to occupy seats in the rear corners. This position is defined by two walls, limiting student movement and interaction. Seat number E3, located in the fifth column and third row, is notably distant from the teacher's desk and the blackboard. E3 could pose a challenge for students who wish to concentrate on the teacher's explanations, because they could experience difficulty hearing the teacher's explanations. Additionally, its distance from the window results in frequent external noise distractions.

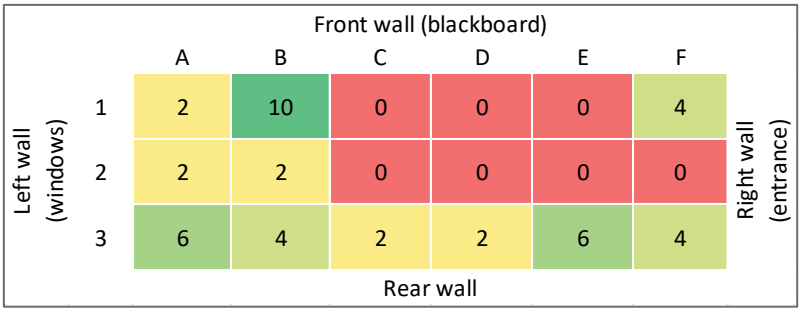

Figure 5.

Distribution of Student's Less Favourable Seating Position

The remaining selections, constituting 9.09%, are distributed among seating positions number F1, B3, and F3. Positions number A1, A2, B2, C3, and D3 each account for 4.54%. The least favoured sideways seating positions are situated at the

very back of the class (A3 to F3), accounting for 54.4%. These positions are closest to the back wall of the class, significantly distant from all prominent features, including sound sources, orientation cues, and outdoor access. Allowing students to sit in these positions is believed to potentially diminish their motivation during the learning process. Similarly, the least favoured distribution of seating extending backward is on the left side of the class (A1 to A3 and B1 to B3), constituting 58.9% near the left-side wall. This row lacks appealing features and offers only a high window that cannot be visually accessed by students. This seating position is also far from the entrance, so the student sitting here will be the last to leave the classroom. These features discourage students from choosing these seats.

Discussion

Connection Between Seating Preferences and Classroom Attachment

In classroom design, it is essential to provide spaces where students can develop a sense of attachment. When students feel emotionally connected to a particular space, they are more likely to feel satisfied and engaged, considering that school-age children are at a formative stage in which their personalities are being shaped—creating conditions that foster this sense of attachment can contribute significantly to the development of their identity (Borzooeian, 2014). Studies on learning environments examine how classroom settings can foster both comfort and attachment, enabling students to be present and actively engaged during learning. In practice, seating arrangements are often determined by the homeroom teacher's policies. However, these decisions rarely consider the spatial potential of the classroom, such as layout and features. The physical condition and location of the classroom influence students' seating preferences. Elementary students tend to choose seats they find personally appealing. These choices are often based on positions that support their learning, make them feel secure, suit their individual characteristics, or offer opportunities for observation. The findings suggest that students' seating preferences are shaped by several factors within the classroom, including the position of the teacher, blackboard, classroom entrance, windows or openings, and the presence of peers.

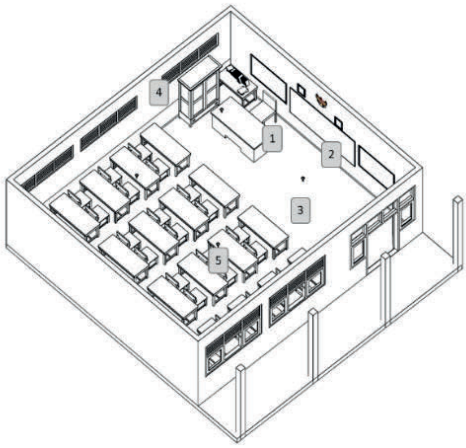

Figure 6.
Key Factors Influencing Seating Preferences

(1) The Teacher Position

The teacher, positioned as the central figure and facilitator of classroom activity, strongly influences students' seating preferences. When teachers adopt an engaging and interactive teaching style, students tend to choose seats closer to the teacher to participate actively, ask questions, and maintain visual contact with instructional materials. Motivating teaching behaviour increases the likelihood of positive student engagement (Cents-Boonstra et al., 2022). On the other hand, if the teacher is perceived as strict or unapproachable, students may choose to sit farther away to create a sense of personal space or reduce potential discomfort. Thus, the teacher's demeanour and instructional style shape the spatial dynamics of the classroom

(2) Blackboard Positioning

In the conventional elementary school's classroom, the placement of blackboards plays a central role as they are conventionally fixed at the front, serving as the primary focal point for instructional and material delivery. Teachers extensively utilize these blackboards to present and illustrate key content during lessons. Given their pivotal role, students often exhibit a preference for seating arrangements in the front rows, positioning themselves close to the blackboard. This strategic seating choice is driven by the students' recognition of the advantages it offers. Students can gain optimal visibility of the board, hear more clearly for the teacher's presentations, as well as the convenience for notetaking. Being near the instructional focal point enhances their ability to actively engage with the material, ensuring a more enriched

and participatory learning experience. The effects of the seating arrangement on participation and assessment performance in a classroom (Rogers, 2020).

(3) Classroom Accessibility

Many students prefer seats near the classroom entrance. This choice is often driven by a desire for quicker access, whether to be the first to enter or to exit for recess, physical education, or other activities. Proximity to the door aligns with students' competitive nature and eagerness to participate early. In contrary, students seated further from the entrance may experience delays and feel less involved in the initial classroom interactions.

(4) Windows and Openings

Classrooms with visual access to the yard and school field are appealing to students. The preferred seating positions are seating close to a window that can provide visual access to the field or to the park, whereas for a high window not very selected by the student. Some prefer seats near windows to observe the outside scenery, school field conditions, and activities of friends from other classes. The exchange of information from inside to outside makes window seats popular. However, some teachers cover windows to prevent distractions, believing it may hinder learning.

(5) Peers and Social Interaction

Social connection plays a pivotal role in shaping student seating preferences. For elementary students, frequent peer interaction is essential, and proximity to close friends often increases comfort and engagement. Seating choices driven by social motivation contribute not only to a positive emotional climate but also foster collaborative learning and active participation in the classroom.

Classroom Design and Flexibility

Elementary school classrooms follow standardized layouts regulated by government, which limits structural flexibility. Nevertheless, these constraints should not hinder innovative and student-centred teaching practices. Teachers can make a substantial impact by creatively managing seating arrangements. Dynamic seating strategies—such as seat rotations, group-based configurations, or occasional free-choice seating—can break the monotony of static layouts and enhance student focus. There is no universal classroom seating arrangement that guarantees positive behavioural and academic outcomes for all types of tasks, as existing research clearly indicates

that the nature of the task—whether interactive or independent—should determine the appropriate seating configuration (Wannarka & Ruhl, 2008). Incorporating movable teaching tools, like portable blackboards, enables more flexible classroom orientations. Encouraging students to participate in decorating the class or creating learning materials (e.g., posters or project displays) fosters a sense of attachment over the space. Despite infrastructural limitations, a well-managed and responsive classroom environment can provide rich, varied learning experiences that maintain attachment and promote academic engagement.

Conclusion

The more compatible the school spaces are with children's behaviour, the better they will foster student engagement. So where should students sit? Although this study was conducted on a small sample, it offers valuable insight into the potential benefits of dynamic seating arrangements. The study found that students' seating preferences were influenced by spatial characteristics, opportunities for social engagement, and academic motivations. However, teachers rarely permit free seat selection, despite its positive impact on comfort and engagement. To enhance equal learning opportunities, teachers are encouraged to utilize the entire classroom space. Many students prefer front-row seats for better access to the teacher and instructional materials, while avoiding areas with limited visibility or engagement features. Encouraging movement within the classroom can help distribute teacher attention more evenly and improve the learning experience. Providing varied seating options can reduce monotony and enhance student focus. Allowing students to choose their seats fosters greater engagement, comfort, and academic achievement. Nevertheless, as findings may differ depending on the school context, further research with a broader sample is recommended.

Acknowledgements

This research is supported by the Center for Higher Education Funding and Assessment under the Ministry of Higher Education, Science, and Technology of Republic Indonesia, and the Indonesia Endowment Funds for Education (LPDP)

References

Allen, K.-A., Reupert, A., & Oades, L. (2021). Building Better Schools with Evidence-based Policy. Routledge. https://impact.chartered.college/article/howard-jones-applying-science-learning-classroom/

Ardiyanto, E., & Muharam, A. (2021). Primary School Student Learning Motivation in Online Learning During the Covid-19 Pandemic. The 3rd International Conference on Elementary Education, 3(1), 10–17. https://covid19.who.int/.

Barrett, P., Davies, F., Zhang, Y., & Barrett, L. (2015). The impact of classroom design on pupils' learning: Final results ofaholistic, multi-level analysis. Building and Environment, 89, 118–133. https://doi.org/10.1016/j.buildenv.2015.02.013

Bojović, I., & Antonijević, R. (2017). Students' Motivation to Learn in Primary School. Open Journal for Psychological Research, 1(1), 11–20. https://doi.org/10.32591/coas.ojpr.0101.02011b

Borzooeian, M. (2014). Place Attachment in Primary Schools. Arts and Design Studies, 22(0), 29–35. https://iiste.org/Journals/index.php/ADS/article/view/14649

Cents-Boonstra, M., Lichtwarck-Aschoff, A., Lara, M. M., & Denessen, E. (2022). Patterns of motivating teaching behaviour and student engagement: a microanalytic approach. European Journal of Psychology of Education, 37(1), 227–255. https://doi.org/10.1007/s10212-021-00543-3

Che Ahmad, C. N., Shaharim, S. A., & Abdullah, M. F. N. L. (2017). Teacher-student interactions, learning commitment, learning environment and their relationship with student learning comfort. Journal of Turkish Science Education, 14(1), 57–72. https://doi.org/10.12973/tused.10190a

Domljan, D., Vlaovic, Z., & Grbac, I. (2010). Pupils' Working Postures in Primary School Classrooms. PERIODICUM BIOLOGORUM, 112(1), 39–45.

Fauziati, E. (2016). Child Friendly School: Principles and Practices. The First International Conference on Child - Friendly Education, 95–101.

Gul, M., & Ozdemir, O. (2023). Eliminating Reading Difficulty in an Elementary 4th Grade Student Based on Learning Style. International Journal of Progressive Education, 19(2), 19–36. https://doi.org/10.29329/ijpe.2023.534.2

Hendrizal, H., Chandra, C., & Kharisma, A. (2022). Attitude Development of Elementary School Students with the Character Education-based Discovery Learning Model. Jurnal Ilmiah Sekolah Dasar, 6(2), 346–354. https://doi.org/10.23887/jisd.v6i2.45572

Herga, N. R., & Fošnarič, S. (2017). Coordination of school science classroom furnishings with anthropometric parameters for 11–12-year-old children. Journal of Elementary Education, 10(1), 99–114.

Hofer, M. (2007). Goal conflicts and self-regulation: A new look at pupils' off-task behaviour in the classroom. Educational Research Review, 2(1), 28–38. https://doi.org/10.1016/j.edurev.2007.02.002

Joyce, S. S., Chundeli, F. A., & Vijayalaxmi, J. (2023). The Impact of Outdoor Environments on Children's Behaviour: Insights from the Primary Schools in Vijayawada, India. ISVS E-Journal, 10(1), 24–36.

Katemba, C. V., Tobing, J. H. L., & Putri, T. A. (2022). Do Kahoot! Games Enhance Vocabulary Learning? Journal of Elementary Education, 15(3), 393–408. https://doi.org/10.18690/rei.15.3.393-408.2022

Kliment, S. A. (2001). BUILDING TYPE BASICS FOR elementary and secondary schools. John Wiley & Sons, Inc.

Kytta, M. (2004). The extent of children' s independent mobility and the number of actualized affordances as criteria for child-friendly environments. Journal of Environmental Psychology, 24(2), 179–198. https://doi.org/10.1016/S0272-4944(03)00073-2

Pirih, A. (2019). EXTENSIVE READING AND CHANGES TO READING MOTIVATION IN EFL AMONG SLOVENE PRIMARY SCHOOL PUPILS. Journal of Elementary Education, 12(4), 291–314.

Purnomo, B., & Aulia, F. (2018). Pelaksanaan Pengelolaan Kelas Di Sekolah Dasar. Jurnal Gentala Pendidikan Dasar, 3(I), 73–91.

Purwaningrum, L., Funatsu, K., Xiong, J., Rosyidi, C. N., & Muraki, S. (2015). Effect of furniture weight on carrying, lifting, and turning of chairs and desks among elementary school children. PLoS ONE, 10(6). https://doi.org/10.1371/journal.pone.0128843

Raresik, K. A., Dibia, I. K., & Widiana, I. W. (2016). Analisis Faktor-faktor yang Mempengaruhi Hasil Belajar Bahasa Indonesia Pada Siswa Kelas V SD Gugus VI. MIMBAR PGSD Undiksha, 4(1), 1–11.

Rogers, K. (2020). The Effects of Classroom Seating Layouts on Participation and Assessment Performance in a Fourth Grade Classroom. Journal of Learning Spaces, 9(1), 31–41.

Rohmanurmeta, F. M., & Farozin, M. (2016). Pengaruh Pengaturan Tempat Duduk Terhadap Motivasi Dan Hasil Belajar Pada Pembelajaran Tematik Integratif. Jurnal Penelitian Ilmu Pendidikan, 9(1). https://doi.org/10.21831/jpipfip.v9i1.10691

Saidi, A. I., Puspitasari, D. G., & Hermawan, F. F. (2023). A Semiotics Analysis of the Interior Design of an Indonesian Elementary and Junior High School Classroom. ISVS E-Journal, 10(10), 463–481.

Satriaji, K. R., Danurdoro, D. H., Sakya, K. A., & Alfin, E. (2020). Kajian Kriteria Meja Belajar Bagi Siswa Sekolah Dasar Di Fasilitas Pengungsian. Jurnal IDEALOG, 5(1), 15–29. https://doi.org/https://doi.org/10.25124/idealog.v5i1

Spencer, C., & Blades, M. (2005). Children and their Environments: Learning, Using and Designing Spaces. In Children and their Environments (Issue 1998). Cambridge University Press. https://doi.org/10.1017/cbo9780511521232

Stewart, G., Webster, C. A., Stodden, D. F., Brian, A., Egan, C. A., & Weaver, R. G. (2019). The association of children's participation in school physical activity opportunities with classroom conduct. International Journal of Educational Research, 97(December 2018), 22–28. https://doi.org/10.1016/j.ijer.2019.06.008

Sutton, E., Brown, J. L., Lowenstein, A. E., & Downer, J. T. (2021). Children's academic and social-emotional competencies and the quality of classroom interactions in high-needs urban elementary schools. Contemporary Educational Psychology, 66(May), 101975. https://doi.org/10.1016/j.cedpsych.2021.101975

Tobia, V., Sacchi, S., Cerina, V., Manca, S., & Fornara, F. (2022). The influence of classroom seating arrangement on children's cognitive processes in primary school: the role of individual variables. Current Psychology, 41(9), 6522–6533. https://doi.org/10.1007/s12144-020-01154-9

UNICEF. (2016). Early Learning and Development Standards (ELDS) and school readiness: Evaluation report. January.

Valikhani, M., Ibrahim, R., & Dolah, M. S. (2016). The influences of furniture on children's health and well-being at primary schoool. Jurnal Teknologi, 78(5), 245–252. https://doi.org/10.11113/jt.v78.8305

van der Lans, R. M., Maulana, R., Helms-Lorenz, M., Fernández-García, C. M., Chun, S., de Jager, T., Irnidayanti, Y., Inda-Caro, M., Lee, O., Coetzee, T., Fadhilah, N., Jeon, M., & Moorer, P. (2021). Student Perceptions of Teaching Quality in Five Countries: A Partial Credit Model Approach to Assess Measurement Invariance. SAGE Open, 11(3). https://doi.org/10.1177/21582440211040121

Wahyuningsih, A., Sumardjoko, B., Desstya, A., Minsih, & Widyasari, C. (2023). Lesson Plan for Elementary School Learning Based on Higher Order Thinking Skills. Jurnal Ilmiah …, 7(1), 159–167. https://ejournal.undiksha.ac.id/index.php/JISD/article/view/56642

Wannarka, R., & Ruhl, K. (2008). Seating arrangements that promote positive academic and behavioural outcomes: A review of empirical research. Support for Learning, 23(2), 89–93. https://doi.org/10.1111/j.1467-9604.2008.00375.x

Wardana, L. A., & Rulyansah, A. (2019). Pengembangan Model Ruang Kelas Berbasis Tematik di Sekolah Dasar. Sekolah Dasar: Kajian Teori Dan Praktik Pendidikan, 28(2), 125–134. https://doi.org/10.17977/um009v28i22019p125

Weinstein, C. S., & David, T. G. (1987). Spaces for Children: The Built Environment and Child Development. In Spaces for Children. Plenum Press.

Author:

Dr. Kukuh Rizki Satriaji, S.Ds., M.T.,
Associate professor, Human and Interior Research Group, Faculty of Art and Design, Institut Teknologi Bandung, Indonesia, email: kukuh.satriaji@itb.ac.id
Izredni profesor, Raziskovalna skupina za človeka in notranjo opremo, Fakulteta za umetnost in oblikovanje, Tehnološki inštitut Bandung, Indonezija, e-pošta: kukuh.satriaji@itb.ac.id

Dr. Imam Santosa, M.Sn.,
Associate professor, Human and Interior Research Group, Faculty of Art and Design, Institut Teknologi Bandung, Indonesia, email: imamz@itb.ac.id
Izredni profesor, Raziskovalna skupina za človeka in notranjo opremo, Fakulteta za umetnost in oblikovanje, Tehnološki inštitut Bandung, Indonezija, e-pošta: imamz@itb.ac.id

Achmad Syarief, S.Sn., M.Sc., Ph.D.,
Human and Industrial Products Research Group, Faculty of Art and Design, Institut Teknologi Bandung, Indonesia, email: asyarief@itb.ac.id
Raziskovalna skupina za človeka in industrijske izdelke, Fakulteta za umetnost in oblikovanje, Tehnološki inštitut Bandung, Indonezija, e-pošta: asyarief@itb.ac.id

Dr. Andriyanto Wibisono, S.Sn., M.Sn.,
Associate professor, Human and Interior Research Group, Faculty of Art and Design, Institut Teknologi Bandung, Indonesia, email: and_wibisono@itb.ac.id
Izredni profesor, Raziskovalna skupina za človeka in notranjo opremo, Fakulteta za umetnost in oblikovanje, Tehnološki inštitut Bandung, Indonezija, e-pošta: and_wibisono@itb.ac.id