

The Design of Classroom Facilities in Primary Schools of Sumenep Regency for Improving Learning Effectiveness

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Abstract: This study examines the classroom facility design in outstanding public and private elementary schools in Sumenep Regency, Indonesia, to describe the management of classroom resources that impact student effectiveness, engagement, and creativity during the learning process. Using a descriptive qualitative method with a multi-case study design, data were collected through observation, documentation, and interviews with teachers and school principals. Data analysis followed Miles and Huberman's model of data reduction, display, and conclusion drawing. The results reveal that three of the five schools studied provided comprehensive literacy facilities and diverse thematic classrooms tailored to grade levels, while two had more basic facilities. Classroom arrangements differed between the lower and upper grades, with the upper classes featuring more structured resources that supported independent learning. These findings underscore the importance of adaptive classroom design in enhancing student learning success within the local context of Sumenep Regency. The study's findings offer valuable insights for educators and policymakers seeking to improve elementary school facilities.

Keywords: Classroom Design, Elementary Schools, Learning Effectiveness

Abstrak: Penelitian ini mengkaji desain fasilitas ruang kelas di sekolah dasar unggulan, baik negeri maupun swasta, di Kabupaten Sumenep. Tujuannya adalah untuk menggambarkan pengelolaan fasilitas kelas yang berpengaruh pada efektivitas, keaktifan, dan kreativitas siswa selama proses pembelajaran. Metode yang digunakan adalah kualitatif deskriptif dengan pendekatan studi multi kasus. Data dikumpulkan melalui observasi, dokumentasi, dan wawancara dengan guru serta kepala sekolah. Analisis data mengikuti model Miles dan Huberman, meliputi reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa dari lima sekolah yang diteliti, tiga sekolah menyediakan fasilitas literasi baca yang lengkap dan beragam tema kelas sesuai jenjang, sementara dua sekolah lainnya masih terbatas pada fasilitas dasar. Penataan ruang kelas juga berbeda antara kelas bawah dan atas, dengan kelas atas cenderung memiliki fasilitas yang lebih terstruktur dan mendukung pembelajaran mandiri. Temuan ini menegaskan pentingnya desain ruang kelas yang adaptif untuk

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menunjang keberhasilan belajar siswa di konteks lokal Kabupaten Sumenep. Implikasi penelitian ini diharapkan dapat menjadi acuan bagi pengelola pendidikan dan pemangku kebijakan dalam meningkatkan kualitas fasilitas sekolah dasar

Kata Kunci: *Desain Kelas, Sekolah Dasar, Efektivitas Pembelajaran*

Introduction

Classroom design is critical to creating an effective and engaging learning environment. The physical layout, availability of resources, and overall arrangement can significantly influence student engagement, motivation, and academic performance. Research consistently shows that a well-designed classroom fosters collaboration, communication, and critical thinking, while a poorly designed one can hinder learning and create distractions (Barrett et al., 2015; Blatchford et al., 2016). Modern classrooms should be flexible and adaptable, accommodate diverse learning styles and activities, and seamlessly integrate technology such as digital devices and interactive whiteboards (Chu et al., 2021; Fullan & Langworthy, 2014; Lackney, 2014).

Despite the recognized importance of classroom design, more research is needed to understand the specific design elements that optimize learning in different contexts. This study investigates classroom design in elementary schools in Sumenep Regency, Indonesia, aiming to identify the types of facilities available in outstanding public and private schools, analyze design variations across grade levels, and examine how these designs support reading literacy and incorporate diverse classroom themes. This research contributes valuable insights into Indonesian classroom design practices, with implications for educators, administrators, and policymakers striving to create effective learning environments.

This study builds upon previous research highlighting the impact of classroom design on student learning. For instance, Barrett et al. (2015) found that classroom design significantly affects pupils' learning, while Blatchford et al. (2016) emphasized the importance of considering the physical environment in educational settings. Furthermore, research by Chu et al. (2021) underscored the need for 21st-century classroom designs that support diverse learning styles and promote student-centered learning. This study adds to the growing body of knowledge on effective classroom design practices

by focusing on the Indonesian context.

This study's findings can inform educational practices in Indonesia and beyond. It focuses on classroom design in elementary schools in Sumenep Regency, East Java, Indonesia. By investigating outstanding public and private schools in this region, the research aims to identify the types of classroom facilities available, explore design variations across grade levels, and assess how these designs support literacy development and the implementation of thematic classrooms.

This research addresses a gap in current literature and contributes valuable insights into Indonesian educational practices and classroom design. The findings intend to inform educators, school administrators, and policymakers striving to create effective, inclusive, and engaging learning environments tailored to local needs and conditions.

Research Method

This study employed a descriptive qualitative approach using a multi-case study design to explore classroom design in elementary schools. This methodology was chosen to capture the detailed and contextual variations in classroom environments across different schools and grade levels (Creswell, 2014; Yin, 2018).

The population comprised outstanding public and private primary schools in Sumenep Regency, Indonesia. They were selected based on their "A" accreditation status and implementation of the Merdeka curriculum, ensuring a focus on schools with high educational standards and contemporary pedagogical practices. Using purposive sampling, five schools were selected – three public and two private.

Data collection involved three main techniques: observation, documentation, and semi-structured interviews. Observations were conducted following a structured protocol to assess classroom layout, seating arrangements, and availability of learning resources. Field notes and photographs supplemented observational data. Documentation included relevant materials such as school policies, curriculum documents, and photographic evidence relating to classroom design. Semi-structured interviews were conducted with school principals and classroom teachers to gain

deeper insight into the rationale behind design choices and their perceived impact on the learning process.

To ensure validity and reliability, data triangulation was employed by cross-verifying information from multiple sources (Patton, 2015). Member checking was performed to confirm the accuracy of interview data with participants. Additionally, inter-rater reliability was established through collaboration with two external researchers who independently reviewed observation protocols and interview transcripts.

Data analysis followed the interactive model proposed by Miles and Huberman (2014), comprising data reduction, data display, and conclusion drawing and verification. This systematic approach allowed for a rigorous interpretation of qualitative data, facilitating an in-depth understanding of the class.

Results and Discussion

Diversity in Classroom Facilities

The study identified significant diversity in classroom facilities, with variations tailored to students' grade levels. Lower-grade classrooms focused on vibrant visual aids, manipulatives, and colourful furniture to foster sensory engagement and foundational learning. Meanwhile, upper-grade classrooms incorporated more structured resources, such as literacy corners, advanced technological tools, and subject-specific learning materials. This differentiation aligns with developmental pedagogies emphasizing age-appropriate resource allocation (Masriani & Istikomah, 2020).

Literacy spaces in upper-grade classrooms were a central feature, particularly in private schools. The principal of one private school remarked, *"Our reading corners are vital in fostering students' love for reading and critical thinking"* (Interview with Principal A, Private School, 2024). Conversely, a teacher from a public school acknowledged, *"While we aspire to have such facilities, budget constraints limit our ability to provide a dedicated literacy space"* (Interview with Teacher B, Public School, 2024). Furthermore, digital learning tools such as interactive whiteboards were more frequently available in private schools, indicating disparities in resource allocation.

Additionally, digital resources, such as interactive whiteboards and tablets, were observed more frequently in private schools than in public schools. This disparity raises concerns about educational equity, as schools with limited funding may struggle to offer the same resources. Studies by Leung and Fung (2006) indicate that these disparities, if unaddressed, can exacerbate gaps in student learning outcomes and access to modern learning tools.

Although diversity in facilities contributes positively to student outcomes, the uneven distribution of resources highlights the need for broader systemic reforms. Government and stakeholders must collaborate to establish standardized guidelines ensuring resource equity across school types and regions.

Table 1. Visual Representation

Facility Type	Private Schools	Public Schools
Reading Corners	Curated collections, group seating	Limited or absent
Seating Arrangements	Flexible and dynamic	Predominantly static
Thematic Designs	Tailored to curriculum objectives	Minimal

Variations in Classroom Layout Design

Classroom layout designs also varied significantly between schools, with private institutions exhibiting more flexibility in seating arrangements than their public counterparts. Flexible seating arrangements—including U-shaped, clustered, and circular layouts—were implemented to promote collaboration and student engagement. A Year 4 teacher shared, “We rearrange desks regularly to facilitate group work, though the limited classroom size often poses challenges” (Interview with Teacher C, Public School, 2024). The headteacher added, “Financial limitations mean we must be creative with existing furniture rather than investing in new layouts” (Interview with Headteacher D, Public School, 2024). These constraints reflect broader infrastructural and budgetary challenges faced by many public schools.

Flexible arrangements were observed to contribute to improved academic engagement, as students could actively participate in group activities and discussions. For instance, cluster students demonstrated greater social interaction and cooperative

problem-solving skills. This finding supports Edward's (2000) perspective that adaptable classroom designs foster inclusivity and collaboration, essential for 21st-century learning skills.

However, implementing such designs is not without challenges. Constraints like limited classroom space, budgetary restrictions, and rigid curricula can hinder flexibility, particularly in public schools. This limitation mirrors findings in developing countries, where infrastructural and systemic barriers impede the adoption of student-centred pedagogical approaches (Okeke, 2013).

Despite these challenges, teachers in some public schools demonstrated innovative approaches by reorganizing fixed furniture or creating thematic corners within their classrooms. These efforts suggest that creativity can partially address infrastructural challenges even within resource-limited settings. Policymakers should consider pilot programs to test scalable models of flexible classroom designs that cater to diverse educational contexts.

The Role of Seating Arrangements

Seating arrangements were found to be a significant determinant of classroom dynamics. Classrooms employing varied seating formations reported higher levels of student participation and reduced disruptive behaviours. For instance, U-shaped and circular setups were frequently employed to facilitate eye contact, foster dialogue, and support teacher-led discussions. This setup creates a more democratic learning environment, empowering students to contribute their perspectives (Fuadah et al., 2020).

Dynamic arrangements, such as moving desks for group activities, were particularly beneficial in promoting active learning. Students in these classrooms displayed increased motivation, collaboration, and engagement. The findings resonate with contemporary collaborative learning theories, such as those by Vygotsky, highlighting the importance of social interactions in cognitive development (Wubbels, 2011).

Nevertheless, practical limitations emerged. Teachers often cited logistical issues, such as difficulty managing larger class sizes or the frequent need to rearrange seating

for different activities. Furthermore, seating flexibility was predominantly seen in private schools, where smaller classes and better funding allowed for innovative layouts. In public schools, rigid seating often reflected logistical constraints, underlining the need for targeted investments to create adaptable learning environments.

Addressing these disparities is crucial for ensuring equitable access to optimized classroom environments. Teachers should be trained in spatial planning and encouraged to experiment with low-cost seating solutions that maximize student engagement and participation.

Integration of Literacy Spaces

Integrating literacy spaces in upper-grade classrooms was a notable trend among private schools. Reading corners equipped with curated books, group seating, and visual aids were common, providing a stimulating environment for literacy development. Teachers often incorporate these spaces into daily learning routines, fostering critical thinking and analytical reading habits.

“As one teacher from a private school explained, “The reading corner is an essential part of our daily activities. It encourages students to explore books independently and discuss ideas with their peers,” (Interview with Teacher A, 2024).

These literacy spaces were observed to improve learning outcomes, particularly in language and comprehension skills. Students engaging regularly with reading spaces demonstrated stronger vocabularies and an enhanced ability to express themselves. This finding corroborates previous studies by Sukma and Sekarwidi (2021), emphasizing the role of reading environments in shaping cognitive growth and critical thinking.

However, literacy spaces were conspicuously absent in lower-grade classrooms, even though early literacy is critical for foundational skill development. Studies from developed countries show that creating literacy-rich environments from early childhood yields long-term cognitive benefits (Yulianti et al., 2021). Addressing this gap requires an expanded focus on literacy integration across all grade levels, supported by appropriate resources and training.

Integration with Educational Theories and Global Context and Implications

The study's findings align closely with theories of constructivist and collaborative learning. As observed in private schools, the emphasis on adaptable classroom designs reflects the principles of learner-centred pedagogy advocated by Dewey and Piaget. These designs facilitate active exploration and peer interaction, supporting the notion that students construct knowledge through hands-on engagement and dialogue (Hidayati et al., 2018).

The findings contribute to the discourse on environmental psychology in education. Research by Okeke (2013) emphasizes that enriched classroom environments foster positive emotional and cognitive states, directly impacting students' ability to focus and absorb information. The presence of vibrant thematic designs, dynamic seating, and literacy spaces in Sumenep schools underscores the role of the environment as a silent teacher, shaping behaviours and attitudes toward learning.

The study's findings have implications beyond Sumenep's local context. Globally, education systems face similar challenges in equipping classrooms with facilities that balance cost, accessibility, and innovation. For instance, UNESCO's Sustainable Development Goal (SDG) 4 emphasizes equitable access to quality education, underlining the need for resource investments in underprivileged areas. The observed disparities in classroom facilities mirror global challenges of resource inequity, as highlighted in studies from low-income countries (Leung & Fung, 2006).

Incorporating the best practices identified in this study, such as flexible layouts and literacy corners, could guide policy frameworks for resource allocation. Governments should prioritize infrastructure funding and teacher training to bridge disparities and promote global competitiveness in education.

Conclusion

The study highlights the critical impact of classroom design and facilities on student engagement, learning outcomes, and overall educational experience in primary schools. By analyzing diverse classroom facilities in Sumenep, the research underscores how tailored designs, such as flexible seating arrangements, thematic decorations, and

literacy corners, contribute to creating a conducive learning environment. The findings reveal significant disparities between private and public schools in the availability and quality of resources, pointing to the need for equitable resource distribution to bridge educational gaps.

Integrating Islamic and global pedagogical principles, including *maqasid shariah* and constructivist theories, supports the argument for creating spaces prioritizing student welfare, inclusivity, and collaborative learning. By linking classroom designs to broader educational objectives like Sustainable Development Goal (SDG) 4, the study emphasizes the importance of aligning school-level practices with global commitments to quality education. However, practical challenges, such as resource and infrastructural limitations, highlight the need for innovative, cost-effective solutions. Policymakers must prioritize equitable infrastructure investments, develop teacher training programs, and establish national standards for classroom design to ensure that all students, irrespective of socioeconomic background, have access to well-equipped learning spaces.

This research contributes to the growing discourse on the intersection of environment and learning, emphasizing that effective classroom management goes beyond pedagogy to include physical design and resource optimization. Future studies should expand geographically and longitudinally to explore the long-term effects of enhanced classroom environments and inform policies that foster inclusive, engaging, and effective educational practices globally.

Limitations and Further Research

While this study provides insights into classroom facility designs, its findings are limited by geographic scope and sampling size. The focus on Sumenep may not fully capture broader regional or national trends. Future research should extend to diverse socio-economic contexts, examining how funding, cultural norms, and teacher training influence classroom design. Longitudinal studies tracking the impact of facility enhancements on long-term learning outcomes are also recommended.

This study highlights the critical role of classroom design in fostering equitable and effective learning environments. Emphasizing flexible seating, thematic spaces,

and literacy facilities provides actionable insights for improving resource allocation and educational strategies. These findings contribute to the global discourse on education by offering scalable models for creating inclusive, student-centered classroom environments.

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