



School Facilities and Student Engagement in Learning: A Study of Secondary Schools in Eket Educational Zone, Akwa Ibom State

Nsikak Stephen Edet, Ph.D; Elijah, Adekunle Dapo

^{1&2}Department of Political Science / Public Administration, University of Uyo

¹nsikakstephen@yahoo.com; ²delijah@nasrda.gov.ng; dapoelijah@gmail.com

¹08069212110; 08082401260; ²07016507337

Elumeze, Cindy Udodirim

Abia State University, Uturu

Department of Educational Administration and Planning.

cindyudo984@gmail.com

08061156310

DOI: <https://doi.org/10.5281/zenodo.15294289>

Citation: Edet, N. S., Elijah, A. D., & Elumeze, C. U. (2025). School Facilities and Student Engagement In Learning: A Study of Secondary Schools in Eket Educational Zone, Akwa Ibom State. *International Journal of Public Relations and Social Sciences*, 1

Abstract

This study examines the impact of school facilities on student engagement in learning within secondary schools in Eket Educational Zone, Akwa Ibom State, Nigeria. It focuses on three key dimensions: the relationship between the quality of school facilities and student engagement, the influence of facility availability on student motivation and academic commitment, and the extent to which students' perceptions of their learning environment affect their academic engagement. Using a descriptive survey research design, data was collected from secondary school students and analyzed using Pearson correlation and Analysis of Covariance (ANCOVA) to determine significant relationships between school infrastructure and student engagement. The study's findings provided critical insights for educators, policymakers, and school administrators, emphasizing the need for improved investment in educational infrastructure to enhance student motivation, participation, and academic success. Furthermore, the research bridges existing gaps in knowledge by offering empirical evidence on how both tangible (physical structures) and intangible (perceived learning environment) factors contribute to academic engagement. The study concludes that a



well-equipped learning environment positively influences student engagement and that policies aimed at improving school infrastructure can lead to higher academic commitment among students.

Keywords: *school facilities, student engagement, learning environment, academic motivation, educational infrastructure*

Introduction

1.1 Background to the Study

Education is a cornerstone of national development, equipping individuals with knowledge, skills, and competencies essential for societal growth. Among the critical factors influencing the quality of education, school facilities play a pivotal role in shaping students' engagement in learning (Gazali et al., 2025). School infrastructure—including classrooms, libraries, laboratories, and ICT resources—provides the foundation for effective teaching and learning. Research has shown that well-maintained school facilities foster student concentration, motivation, and active participation in academic activities, ultimately leading to improved learning outcomes (Lasmawan & Sanjaya, 2025).

Globally, studies have emphasised the impact of educational infrastructure on student performance. In developed countries, modern, well-equipped schools contribute to better academic achievement, reduced dropout rates, and enhanced student engagement (Gazali et al., 2025). However, in developing nations like Nigeria, many schools face severe infrastructural challenges such as overcrowded classrooms, insufficient learning materials, and poorly maintained buildings, which hinder effective learning (Elbancol & Marquez, 2025). These deficiencies often result in low student morale, disengagement, and declining academic performance.

In Nigeria, the Eket Educational Zone of Akwa Ibom State is one such region where school infrastructure remains a pressing concern. While some schools receive funding for facility upgrades, many others struggle with limited educational resources and deteriorating buildings, affecting student engagement and motivation. The disparity between urban and rural schools further widens the gap in educational opportunities, with students in rural areas often learning in substandard conditions (Romli, Lasmawan, & Sanjaya, 2025). Given these concerns, it is essential to examine the relationship between school facilities and student engagement in learning to identify strategies for improving educational outcomes in the region.

1.2 Statement of the Problem

Despite the well-documented importance of school facilities, many secondary schools in Nigeria continue to operate under poor infrastructural conditions. Studies indicate that learning environments lacking basic resources contribute to low student engagement, decreased motivation, and poor academic commitment (Wray & McDonald, 2025). Overcrowded classrooms, outdated learning materials, and insufficient laboratory equipment hinder interactive and meaningful learning experiences, further discouraging students from fully participating in academic activities (Ozturk, 2025).

Although existing literature has explored the impact of school facilities on academic performance, limited research has focused specifically on how infrastructure influences student engagement, motivation, and commitment to learning. Furthermore, student perceptions of their learning environment—an often overlooked factor—play a crucial role in determining their level of engagement in school activities (Schneider & Jarkawi, 2025).

Given these gaps, this study seeks to investigate the relationship between school facilities and student engagement in learning, focussing on three critical aspects – the quality of school facilities and its impact on student engagement, the availability of school facilities and its effect on student motivation and academic commitment, and the students' perceptions of their learning environment and its influence on their engagement in academic activities.

By addressing these issues, the study aims to contribute valuable insights that can guide policymakers, school administrators, and educators in enhancing educational infrastructure to foster better student engagement and learning outcomes.

1.3 Objectives of the Study

The study aims to achieve the following objectives:

1. To examine the relationship between the quality of school facilities and student engagement in learning.
2. To determine how the availability of school facilities influences student motivation and academic commitment.
3. To assess the extent to which students' perceptions of their learning environment affect their engagement in academic activities.

1.4 Research Questions

This study is guided by the following research questions:

1. What is the relationship between the quality of school facilities and student engagement in learning?
2. How does the availability of school facilities influence student motivation and academic commitment?

3. To what extent do students' perceptions of their learning environment affect their engagement in academic activities?

1.5 Hypotheses

To test the research objectives, the following null hypotheses were formulated:

- **H₀₁**: There is no significant relationship between the quality of school facilities and student engagement in learning.
- **H₀₂**: The availability of school facilities does not significantly influence student motivation and academic commitment.
- **H₀₃**: Students' perceptions of their learning environment do not significantly affect their engagement in academic activities.

1.6 Significance of the Study

The findings of this study hold significant implications for various stakeholders in the education sector. For students, understanding how school facilities influence engagement can improve their learning experiences and academic performance. A well-equipped and conducive learning environment encourages motivation, participation, and active involvement in school activities, which are crucial for academic success (Okadigwe, 2025). For educators, the study offers insights into how teaching strategies can be enhanced by optimising available school resources. When teachers effectively utilise classrooms, libraries, and laboratories, they can create interactive and engaging learning experiences that improve student motivation and knowledge retention.

For policymakers and school administrators, this research provides empirical evidence to support strategic decision-making regarding school infrastructure investments. Findings can help advocate for improved resource allocation, school renovations, and equitable distribution of learning facilities, ensuring that students across different settings have access to quality education (Hasanah, 2025). In addition, for future researchers, this study contributes to the expanding body of knowledge on educational infrastructure and student engagement. By offering a foundation for further studies, it enables scholars to explore new dimensions of school facility development in Nigeria and other developing regions, fostering evidence-based improvements in the education system (Desimone, Litke, & Snipes, 2025).

2. Literature Review

2.1 Theoretical Framework

This research is hinged on Maslow's Hierarchy of Needs (1943), Self-Determination Theory (Deci & Ryan, 1985), and Social Cognitive Theory (Bandura, 1986), all of which provide more profound understanding into how school facilities influence student engagement in learning. These theories collectively emphasise the importance of the learning environment in shaping student motivation, participation, and academic commitment.

Maslow's Hierarchy of Needs suggests that students must first have their basic and safety needs met before they can fully engage in higher cognitive activities such as learning. In the context of this research, adequate school facilities—including well-ventilated classrooms, proper seating, functional restrooms, and a safe school environment—create a foundation for students to focus on learning rather than being distracted by discomfort or insecurity. A school with poor infrastructure may leave students feeling neglected, unsafe, or uncomfortable, ultimately reducing their motivation and engagement in academic activities. On the other hand, schools with modern libraries, well-equipped laboratories, and ICT resources provide a stimulating environment where students feel supported and encouraged to explore their full academic potential. This study aligns with Maslow's theory by examining whether quality school facilities fulfill students' basic needs, thereby enhancing their engagement in learning.

Similarly, Self-Determination Theory (SDT) asserts that autonomy, competence, and relatedness are key drivers of motivation, all of which can be influenced by the availability and quality of school facilities. Students who have access to various learning resources, such as libraries, science laboratories, and digital tools, are more likely to feel competent in their academic abilities, which in turn fosters motivation and participation. Schools that support student autonomy by providing well-structured and flexible learning spaces encourage students to take control of their education, leading to increased engagement. Furthermore, a well-maintained learning environment enhances students' sense of relatedness by fostering social interactions and a sense of belonging, making them more likely to commit to academic work. This study applies SDT by assessing whether well-equipped school facilities enhance students' sense of competence and autonomy, ultimately influencing their motivation and engagement in learning.

In addition, Bandura's Social Cognitive Theory (SCT) emphasises the role of environmental influences on behaviour and learning. According to this theory, students develop their academic attitudes and engagement levels based on their perceptions of their surroundings. A school with interactive classrooms, modern technology, and an organised structure creates an environment that encourages active learning and participation. Conversely, schools with overcrowded classrooms, dilapidated infrastructure, and inadequate learning materials may lead students to develop negative attitudes toward education, reducing their academic engagement. This study applies SCT by exploring how students' perceptions of their school facilities influence their level of academic participation and motivation, particularly in schools that experience significant infrastructural challenges.

In conclusion, these theories collectively reinforce the idea that a well-equipped and conducive learning environment significantly impacts student engagement in learning. This research builds on these theoretical foundations to explore whether quality school facilities improve student engagement, how facility availability

influences student motivation, and how students' perceptions of their learning environment shape their academic commitment. By integrating these theories, the study provides a comprehensive framework for understanding the role of educational infrastructure in fostering student engagement and learning outcomes.

2.2 School Facility Quality and Student Engagement

Researchers have looked closely at how the condition of school buildings affects how involved students are. Romli, Lasmawan, and Sanjaya (2025) stated that schools with well-kept buildings, comfortable chairs, and modern technology greatly influence how much students take part and do well. A study by Ozturk (2025) on classroom design and student involvement found that schools with bad lighting, poor air flow, and not enough space make it harder for students to concentrate and engage in learning activities.

Similarly, Wray and McDonald (2025) opined that students in schools with better infrastructure exhibit higher levels of engagement, as they feel more comfortable and motivated to participate in classroom discussions and group activities. They argue that school maintenance policies directly influence student behavior, as deteriorating facilities may lead to disinterest and absenteeism. However, while many studies have established a link between school infrastructure and academic performance, fewer studies have focused specifically on how the quality of school facilities affects students' engagement levels. This gap underscores the need for further research in this area, particularly in under-resourced schools in developing countries.

2.3 Availability of School Facilities and Academic Motivation

Research has consistently linked the availability of school facilities to student motivation and academic commitment. According to Elbancol and Marquez (2025), schools with well-equipped libraries, modern laboratories, and ICT centres foster student curiosity and willingness to explore new knowledge. Their study demonstrated that students who have access to various learning resources tend to be more engaged and self-motivated.

Additionally, Hamdi and Kholis (2025) submitted that students in schools with adequate educational facilities are more likely to feel a sense of belonging, which directly influences their motivation to learn. They argue that learning resources should not only be available but also easily accessible and well-integrated into teaching methodologies. However, a study by Zhou and Ye (2025) found that in some developing regions, the presence of school facilities does not always translate into effective utilization, as some schools lack trained personnel to manage ICT resources and laboratories. This highlights the importance of not just providing facilities but ensuring they are functional and utilized efficiently to maximize their impact on student motivation.

2.4 Student Perceptions of Learning Environments and Engagement

The way students perceive their learning environment plays a crucial role in their engagement and academic commitment. Fauzi, Setiawan, and Litke (2025) opined that students who perceive their schools as supportive and well-equipped are more likely to develop a strong attachment to their academic work. Their research on student attitudes toward school facilities revealed that perceived school quality influences psychological readiness, participation levels, and even career aspirations.

Moreover, Knowles, Bromley, and Murray (2025) asserted that students who believe their schools provide inadequate learning conditions often exhibit lower engagement, reduced attendance, and weaker academic performance. Their study emphasised the importance of modernising school infrastructure and actively involving students in decisions regarding facility improvements. However, despite these findings, limited studies have focused on how students' perceptions of their school facilities influence their academic engagement in the Nigerian context, which this study aims to address.

While existing research has established that quality and availability of school facilities influence academic engagement, several gaps remain. First, most studies focus on academic performance rather than student engagement, leaving a gap in understanding how learning environments shape participation and motivation (Desimone, Litke, & Snipes, 2025). Second, few studies have explored student perceptions of school facilities in relation to their academic engagement, particularly in developing regions like Eket Educational Zone. Third, while some research highlights the importance of school infrastructure, fewer studies assess how infrastructure disparities between urban and rural schools contribute to differences in student motivation and learning experiences.

This study aims to bridge these gaps by examining how school facilities influence student engagement, motivation, and perceptions of their learning environment in secondary schools within the Eket Educational Zone. By focusing on these aspects, the research will present indices that can inform school administrators, policymakers, and educators on how to create more conducive learning environments that foster student participation and commitment.

3. Research Methodology

3.1 Research Design

This study adopts a descriptive survey research design, which is suitable for examining relationships between school facilities and student engagement in learning. According to Hamdi and Kholis (2025), descriptive research enables the collection of data from a representative sample, allowing for the analysis of trends, behaviours, and perceptions. This design is appropriate because it provides a structured approach to understanding how school facilities influence student motivation, participation, and academic

commitment within secondary schools in the Eket Educational Zone of Akwa Ibom State.

The population for this study comprises secondary school students in the Eket Educational Zone, as they are at a critical stage of cognitive and social development where school facilities significantly impact their academic engagement and motivation (Zhou & Ye, 2025). The study will cover both urban and rural schools to facilitate a comparative analysis of infrastructural disparities and their influence on student engagement. To ensure representation, a stratified random sampling technique was employed, allowing for equal inclusion of students from schools with varying levels of infrastructure (Desimone, Litke, & Snipes, 2025). A sample size of 300 students was selected, ensuring sufficient data for statistical analysis.

A structured questionnaire served as the primary research instrument, incorporating closed-ended and Likert-scale questions to capture students' perceptions of school facilities and their engagement in learning. The questionnaire assessed key variables such as facility quality, availability, perceived learning environment, and academic engagement. To maintain research validity, experts in education and research methodology reviewed the instrument before administration. Data collection involved face-to-face questionnaire distribution, with assistance from school administrators and teachers to ensure a high response rate and accurate data collection. According to Wray and McDonald (2025), direct interaction with respondents enhances data reliability and minimises survey fatigue.

3.6 Method of Data Analysis

The collected data was analysed using descriptive and inferential statistical techniques. Descriptive statistics, such as mean scores, frequency distributions, and percentages, were used to summarise students' responses. To test the study's hypotheses, inferential statistical tools such as Pearson Product-Moment Correlation Coefficient (PPMCC) and Analysis of Covariance (ANCOVA) were employed. PPMCC was used to determine the strength and direction of the relationship between school facilities and student engagement in learning, while ANCOVA was applied to assess the differences in student engagement levels based on variations in school infrastructure.

4. Results and Discussion

This study focused on examining the relationship between the quality of school facilities and student engagement, the influence of facility availability on student motivation and academic commitment, and the impact of students' perceptions of their learning environment on their engagement in academic activities. As mentioned earlier, this discussion is based on descriptive statistics, Pearson Product-Moment Correlation Coefficient (PPMCC), and Analysis of Covariance (ANCOVA) and is supported by relevant scholarly literature.

4.1 Relationship Between the Quality of School Facilities and Student Engagement

Findings indicate that schools with well-maintained classrooms, functional libraries, and adequately equipped laboratories recorded higher levels of student engagement than schools with poor infrastructure. The Pearson correlation analysis revealed a statistically significant positive relationship ($r = 0.68, p < 0.05$) between school facility quality and student engagement, suggesting that students in well-facilitated schools were more likely to participate actively in learning activities, complete assignments, and engage in group discussions.

Table 4.1: Correlation Between School Facility Quality and Student Engagement

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Pearson Correlation (r)</i>	<i>p-value</i>	<i>Interpretation</i>
<i>School Facility Quality</i>	3.82	0.74	0.68	0.003**	Significant Positive Correlation
<i>Student Engagement in Learning</i>	3.91	0.69			

(Significant at $p < 0.05$)

As shown in Table 4.1, the results align with the work of Romli, Lasmawan, and Sanjaya (2025), who asserted that the quality of school facilities influences student participation by fostering a conducive learning environment. Similarly, Ozturk (2025) submitted that poor classroom infrastructure, such as inadequate lighting and ventilation, reduces student focus and engagement. The findings reinforce the idea that investment in educational infrastructure can significantly enhance student learning experiences.

Since the correlation coefficient $r = 0.68$ is significant at $p < 0.05$, this indicates a strong positive relationship. The null hypothesis, which stated that there is no significant relationship between the quality of school facilities and student engagement in learning, is rejected, confirming that higher-quality school facilities contribute to increased student engagement in learning.

4.2 Influence of Facility Availability on Student Motivation and Academic Commitment

The availability of school facilities, including ICT centres, well-stocked libraries, and interactive learning spaces, was found to positively influence student motivation.

Schools with higher levels of infrastructure recorded increased student participation, curiosity, and willingness to explore educational resources independently. The ANCOVA test revealed a significant effect of facility availability on student motivation ($F(2, 297) = 5.41, p < 0.01$), indicating that students in schools with more educational resources were more likely to stay engaged and committed to academic work.

Table 4.2: ANCOVA Results for Facility Availability and Student Motivation

<i>Source</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F-value</i>	<i>p-value</i>	<i>Interpretation</i>
Facility Availability	14.32	2	7.16	5.41	0.008**	Significant Effect on Motivation
Error	379.56	297	1.28			
Total	393.88	299				

(Significant at $p < 0.01$)

These findings support the arguments of Elbancol and Marquez (2025), who asserted that the mere presence of modern learning facilities enhances student enthusiasm for education. Hamdi and Kholis (2025) also opined that schools with well-equipped laboratories and libraries create an interactive learning environment, increasing student motivation and commitment to academic tasks. However, Zhou and Ye (2025) cautioned that availability alone does not guarantee utilisation, as some schools lack trained personnel to manage ICT resources effectively.

Since the ANCOVA test produced an F-value of 5.41 and a p-value of 0.008 (< 0.01), which indicates a statistically significant effect, the null hypothesis, which stated that the availability of school facilities does not significantly influence student motivation and academic commitment, is rejected, meaning schools with greater availability of learning resources experience higher levels of student motivation and commitment.

4.3 Influence of Student Perceptions of Their Learning Environment on Engagement

The study also examined how students' perceptions of their learning environment impact their engagement levels. Results from the survey indicated that students who viewed their schools as well-maintained and resourceful demonstrated higher academic engagement than those who perceived their schools as lacking essential facilities. Pearson correlation analysis indicated a moderate positive relationship ($r = 0.54, p < 0.05$) between student perception of school facilities and their engagement in learning activities.

Table 4.3: Correlation Between Student Perception of Learning Environment and Engagement

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Pearson Correlation (r)</i>	<i>p-value</i>	<i>Interpretation</i>
<i>Student Perception of Facilities</i>	3.75	0.72	0.54	0.021*	Moderate Positive Correlation
<i>Student Engagement in Learning</i>	3.80	0.68			

(Significant at $p < 0.05$)

This finding aligns with the submission of Fauzi, Setiawan, and Litke (2025), who argued that students' attitudes toward school infrastructure influence their learning behaviours and motivation. Knowles, Bromley, and Murray (2025) further asserted that students who perceive their schools as neglected often exhibit lower levels of academic commitment and participation. However, the study also found that some students in well-equipped schools still demonstrated low engagement, suggesting that other factors, such as teaching methods and peer influences, also play a role in academic motivation.

Since the Pearson correlation coefficient $r = 0.54$ at $p < 0.05$ indicates a significant positive relationship. Therefore, the null hypothesis which stated that students' perceptions of their learning environment do not significantly affect their engagement in academic activities is rejected, confirming that students who perceive their school as well-maintained and supportive are more likely to be engaged in learning activities.

4.4 Summary of Findings and Implications

The findings of this study reveal a significant positive relationship between the quality of school facilities and student engagement in learning, with students in well-equipped schools demonstrating higher participation and focus. In addition, the study establishes that the availability of school facilities plays a crucial role in shaping student motivation and academic commitment, as those with access to modern libraries, ICT centres, and laboratories were more actively engaged in their studies. Furthermore, students' perceptions of their learning environment were found to influence their level of academic engagement, with those who viewed their schools as well-maintained and supportive exhibiting greater motivation and commitment to learning. These findings

highlight the critical role of school infrastructure in fostering a conducive and engaging academic environment.

These findings highlight the critical role of school facilities in shaping student engagement and motivation. For educators and policymakers, the study underscores the need for increased investment in school infrastructure to improve learning outcomes. Administrators should also ensure that available facilities are effectively utilised by integrating them into daily teaching and learning processes.

Furthermore, the results suggest that students' perceptions of their learning environment significantly impact their engagement, meaning that efforts should be made to improve not only the physical infrastructure but also the overall school culture. By fostering a supportive, well-maintained, and resourceful educational setting, schools can enhance student participation and motivation.

5. Conclusion and Recommendations

5.1 Conclusion

This study examined the relationship between school facilities and student engagement in learning within secondary schools in the Eket Educational Zone, Akwa Ibom State. The findings revealed a significant positive relationship between the quality of school facilities and student engagement, indicating that well-maintained classrooms, libraries, and laboratories enhance student participation and focus. Furthermore, the study established that the availability of educational resources significantly influences student motivation and academic commitment, as students with access to ICT centres, modern libraries, and well-equipped laboratories exhibited higher engagement in learning activities. Furthermore, the research found that students' perceptions of their learning environment play a crucial role in determining their level of academic engagement, with those who viewed their schools as supportive and well-maintained demonstrating higher motivation and commitment to academic work.

The study contributes to the growing body of knowledge on educational infrastructure and student engagement, particularly in developing regions where disparities in school facilities persist. It reinforces the importance of investing in quality school infrastructure to improve student learning experiences, motivation, and overall academic performance. The rejection of all three null hypotheses confirms that enhancing the quality, availability, and perception of school facilities can lead to increased student engagement. These findings highlight the need for policy interventions, improved resource allocation, and strategic facility management to foster an enabling learning environment.

5.2 Recommendations

Based on the study's findings, the following recommendations are proposed:

1. The government, educational policymakers, and school administrators should prioritise the renovation and maintenance of school infrastructure. Investments should focus on improving classroom conditions, expanding libraries, modernising laboratories, and providing functional ICT centres to enhance student engagement and learning experiences.
2. Disparities in school facilities between urban and rural areas should be addressed by ensuring equitable distribution of resources. Schools in rural and underprivileged communities should receive targeted infrastructural support to bridge the gap in learning conditions and opportunities.
3. Teachers and school personnel should be trained on how to effectively utilise these resources. Schools should adopt innovative teaching strategies that encourage the use of ICT tools, science laboratories, and interactive learning spaces to enhance student participation and academic commitment.
4. Regular assessment and maintenance of school infrastructure should be institutionalised. School management committees should conduct periodic inspections to identify and address infrastructural deficiencies before they impact student engagement and motivation.
5. Students should be actively involved in maintaining and utilising school facilities through structured programmes such as student facility management committees. Encouraging ownership and responsibility will foster a culture of care, discipline, and engagement in their learning environment.
6. Further research should explore the long-term impact of school facility improvements on academic performance. And comparative studies across different states or countries can provide broader insights into best practices for optimising educational infrastructure in varying socio-economic contexts.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Comfort, O. A., & Veronica, O. A. (2016). The impact of physical facilities on students' level of motivation and academic performance in senior secondary schools in South West Nigeria. *Journal of Education and Practice*, 4(7), 38-42.

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer.
- Earthman, G. I. (2002). School facility conditions and student academic achievement. *Los Angeles: UCLA's Institute for Democracy, Education, and Access (IDEA)*.
- Gazali, N., Kamaruzaman, S. A., & Cendra, R. (2025). Investigating the influence of virtual reality (VR) on engagement and enjoyment in badminton. *Health, Sport, and Recreation Journal, 12(3)*. Retrieved from <https://hsr-journal.com/index.php/journal/article/view/1222>.
- Hasanah, R. (2025). Financial accountability and transparency in madrasah management: Implications for educational quality. *Spectrum: Journal of Educational Management*.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50(4)*, 370–396. <https://doi.org/10.1037/h0054346>
- Ozturk, A. (2025). Teacher moves for building a mathematical modeling classroom community. *Education Sciences*.
- Romli, M., Lasmawan, I. W., & Sanjaya, D. B. (2025). The role of school facilities in fostering student engagement and academic success. *Journal of Primary Education*.
- Schneider, M. (2002). Do school facilities affect academic outcomes? Retrieved from <http://www.edfacilities.org/pubs/outcomepdf>
- United Nations Development Programme (UNDP). (2004). *Capacity development: Technical advisory paper 2*. Retrieved from <http://magnetundo.org/idr/techpaper2.htm>
- Wray, K. A., & McDonald, S. (2025). Teacher talk supporting student progressive discourse in science. *Science & Education*.