**Physical Classroom Resources and Teacher's Work Productivity in Public Elementary Schools**

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ABSTRACT

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| In resource-constrained educational settings like the Boston District of Davao Oriental, understanding the link between physical classroom resources and teacher productivity is vital for improving teaching outcomes. This study aimed to examine the significant relationship between physical classroom resources and teacher work productivity in public elementary schools within the district. A descriptive-correlational research design was utilized, involving 105 public school teachers as participants. Data were collected through standardized face-to-face surveys and analyzed using mean, standard deviation, Pearson product-moment correlation, and multiple linear regression. Results revealed that while physical classroom resources were moderately extensive, teacher work productivity was rated as very extensive. A moderate, significant relationship was identified between the two variables, with findings indicating that physical resources significantly influence teacher productivity. These insights can inform school leaders and policymakers in implementing data-driven improvements in resource allocation, advancing educational reform efforts, and enhancing the overall quality of teaching and learning environments. |

*Keywords*: Physical Classroom Resources, Teacher Work Productivity, Public Elementary Schools, Descriptive-Correlational, Education

1. INTRODUCTION

Teacher productivity plays a crucial role in the effectiveness of the educational system. Work productivity among teachers is influenced by various factors, including workload, job satisfaction, institutional support, and resource availability. Studies suggest that low productivity among educators can negatively impact student performance, institutional goals, and overall educational outcomes. Factors such as excessive administrative tasks, inadequate teaching resources, and lack of professional development opportunities contribute to reduced efficiency and motivation among teachers. Addressing these issues is essential in fostering a productive teaching environment that supports student success.

Internationally, the issue of low teacher productivity has been a persistent challenge in many educational systems. Studies have shown that teachers in Kenya struggle with excessive workload, insufficient remuneration, and limited autonomy in instructional strategies, all of which contribute to burnout and decreased productivity. Moreover, in Ghana, particularly, teacher shortages and inadequate school infrastructure further exacerbate the problem. International agencies such as UNESCO and the International Labour Organization (ILO) emphasize the need for better working conditions, continuous training, and sufficient resources to improve teacher performance globally (Rawkins, 2021).

Physical classroom resources play a significant role in influencing teacher productivity. Well-equipped classrooms with adequate teaching materials, functional technology, and proper furniture create an environment conducive to effective instruction. When teachers have access to sufficient resources, they can efficiently plan and deliver lessons, reducing preparation time and minimizing stress (Nwuke & Nwanguma, 2024). Conversely, a lack of resources, such as outdated textbooks, broken equipment, and poor classroom facilities, can hinder lesson delivery and increase frustration, ultimately lowering productivity (Riski, 2021). Several studies have explored the connection between physical classroom resources and teacher work productivity, highlighting the critical role that well-equipped learning environments play in enhancing teachers’ ability to deliver effective instruction. Adequate classroom resources, such as desks, chairs, computers, and whiteboards, contribute significantly to teachers’ efficiency in lesson delivery and classroom management (Ibrahim, 2023). A properly resourced classroom enables teachers to focus more on teaching and less on logistical concerns, ultimately improving the quality of instruction and student engagement (Buerkle et al., 2023). Moreover, access to technology and modern tools facilitates interactive learning, which can make lesson plans more engaging and dynamic, enhancing the overall classroom experience (Haleem et al., 2022).

In the Philippines, poor curriculum coherence among teachers is a pressing concern that affects their productivity. The rapid implementation of curriculum reforms, such as the K-12 program, has led to inconsistencies in instructional delivery, requiring teachers to adapt quickly without adequate support (Barrot, 2023). In City of Albay, many teachers report challenges in aligning lesson plans with prescribed learning outcomes due to unclear guidelines and lack of professional development programs. As a result, educators experience increased workload and stress, which negatively impact their teaching effectiveness (Bibon, 2022).

Research suggests that physical classroom resources are vital in supporting teacher work productivity and overall teaching effectiveness. By ensuring that classrooms are well-equipped with the necessary tools and resources, schools can create a more productive, engaging, and efficient teaching environment. This, in turn, contributes to improved student outcomes and higher levels of teacher satisfaction (Maxwell, 2024). When educators are provided with the resources they need, they are better equipped to implement innovative teaching strategies, collaborate with colleagues, and foster a positive learning experience for their students (Martinez, 2022).

The integration of modern classroom resources also enhances teachers' ability to utilize new instructional strategies, such as blended learning and flipped classrooms. In these approaches, technology plays a critical role in enabling teachers to deliver content outside of the traditional classroom environment, allowing for more personalized and self-directed learning (Pan et al., 2021). With the right tools and resources, teachers can design lessons that are more flexible, catering to students’ individual needs and learning paces, which increases both student engagement and academic achievement (Pramesworo et al., 2023). Additionally, digital tools offer teachers a variety of ways to assess and track student progress, making it easier to adjust teaching strategies in real-time (Ahshan, 2021).

At the local level, in particularly in Boston District, Division of Davao Oriental, teachers face challenges that contribute to low work productivity. Reports indicate that public school teachers struggle with large class sizes, insufficient instructional materials, and excessive non-teaching responsibilities. These factors hinder their ability to focus on instructional tasks and improve student learning outcomes. Additionally, the lack of administrative support and professional development opportunities further exacerbates the issue, leading to job dissatisfaction and reduced motivation among educators.

Based on the foregoing challenges, this study aims to determine the relationship between various factors and work productivity among elementary school teachers in public schools in Boston District, Division of Davao Oriental. Given the increasing demands on teachers and the critical role they play in shaping students' educational experiences, understanding the determinants of teacher productivity is urgent. The findings of this research will be significant in informing policymakers, school administrators, and educational stakeholders on strategies to enhance teacher performance. By identifying key factors affecting teacher productivity, this study can contribute to the development of policies and interventions that support educators, ultimately improving the quality of education in public elementary schools.

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**Figure 1:** Conceptual Framework of the Study

**1.1 Statement of the Problem**

This study aimed to determine the significant relationship between physical classroom resources and teacher work productivity in public elementary schools in Boston District, Division of Davao Oriental . Specifically, it sought to answer the following questions:

 1. What is the extent of the physical classroom resources in public elementary schools in

 terms of:

 1.1 classroom and seating capacity;

 1.2 technology and learning tools; and

 1.3 learning materials and equipment?

 2. What is the level of teacher work productivity in public elementary schools in terms of:

 2.1 delivery of subject matter to students;

 2.2 offering moral guidance to students; and

 2.3 assessment of students’ work?

 3. Is there a significant relationship between physical classroom resources and teacher

 work productivity in public elementary schools in Boston District, Division of Davao

 Oriental?

 4. What domains of physical classroom resources significantly influence teacher work

 productivity in public elementary schools in Boston District, Division of Davao Oriental?

**1.2 Hypotheses**

Ho1: There is no significant relationship between physical classroom resources and teacher work productivity in public elementary schools.

Ho2: None of the domains of physical classroom resources significantly influence teacher work productivity in public elementary schools.

2. methodology

**2.1 Research Design**

The study employed a quantitative research design, specifically utilizing a descriptive correlational approach. Quantitative research involves the systematic collection of numerical data, with statistical, mathematical, or computational techniques applied to ensure objective, accurate, and measurable results (Mohajan, 2020). To achieve reliable findings, the study used standardized and controlled data collection methods, such as surveys, to quantify variables and test hypotheses (Rassel et al., 2020).

Furthermore, a descriptive correlational research approach was applied to explore and describe the connections between two or more variables without altering them. The primary goal of this approach was to identify and understand patterns, relationships, or associations between variables (Mertler et al., 2021). Unlike experimental research, which seeks to establish causality by manipulating conditions, descriptive correlational research focuses on measuring the strength and direction of relationships as they naturally occur (Seeram, 2019).

In the context of this study, the descriptive-correlational research design was deemed suitable as it sought to describe the extent of physical classroom resources and teacher work productivity. The study aimed to examine the relationship between physical classroom resources and teacher work productivity in public elementary schools.

**2.2 Research Respondents**

This study was conducted in Boston District, Division of Davao Oriental. It included the 12 schools of Boston District. There were 105 teachers who were involved as respondents of the study out of a population of 142, determined using Slovin’s Formula with a 0.05 margin of error. These respondents rated the Physical Classroom Resources and Teacher Work Productivity in Public Elementary Schools. The study was conducted during the school year 2024–2025. In selecting the respondents, the researcher employed simple random sampling using the lottery or fishbowl technique. Numbers were assigned to the respondents in the population, and these were placed in a container large enough to allow the rolled pieces of paper to move freely when shaken. The researcher then picked out the desired number of participants for the study (Sihombing, 2023).

The inclusion criteria were as follows: first, the teacher must have been currently employed at a public elementary school within the Boston District, Division of Davao Oriental during the 2024–2025 school year. Second, the teacher must have had at least one year of teaching experience in any subject. Teachers who did not meet these criteria were excluded. Specifically, those not employed in a public elementary school within the Boston District, Division of Davao Oriental during the 2024–2025 school year, those with less than a year of teaching experience, and teachers on temporary leave or undergoing administrative actions were excluded, as they might not have accurately represented regular teaching experiences. Additionally, school administrators and guidance counselors, who did not directly teach elementary subjects, were also excluded.

**2.3 Research Instrument**

The first part of the questionnaire was based on the Physical Classroom Resources Scale by Katuku and Asiimwe (2024). The scale included items that focused on evaluating various domains of physical classroom resources, including classroom and seating capacity, technology and learning tools, and learning materials and equipment. Its overall Cronbach’s alpha coefficient was 0.800, which supported the reliability of the questionnaire for measuring the variable physical classroom resources. In this study, the physical classroom resources scale demonstrated good reliability, with a Cronbach’s alpha value of 0.986.

The second part of the questionnaire was developed by Utami and Vioreza (2021) to assess teacher work productivity. The Teacher Work Productivity Scale assessed the delivery of subject matter to students, the provision of moral guidance, and the assessment of students’ work. The overall Cronbach’s alpha coefficient for the scale was 0.850, indicating that the questionnaire was reliable for measuring the utilization of new trends in teaching strategies. Additionally, the teacher work productivity questionnaire demonstrated excellent reliability in this study, with a Cronbach’s alpha value of 0.989.

**2.4 Data Gathering Procedure**

# In order to collect data for this study, the researcher went through the following processes and procedures:

# The data collection procedure for this study was carried out in a systematic manner to ensure ethical adherence and to obtain the necessary approvals. Initially, formal permission was requested from the Dean of the Graduate School. Once granted, the request was forwarded to the Schools Division Superintendent for further evaluation. This step-by-step approval process ensured that all institutional and educational guidelines were followed.

# The next phase involved gathering data by creating and distributing survey questionnaires that were thoughtfully designed to meet the study's objectives. Coordination with school officials ensured the smooth distribution of the surveys to public school teachers, along with a clear explanation of the study's purpose. During the data collection phase, the confidentiality and anonymity of participants were prioritized to encourage candid responses.

# After data collection, the retrieval process involved carefully organizing and analyzing the collected information. The completed questionnaires were counted, and responses were systematically recorded for statistical evaluation using statistical tools such as mean, standard deviation, correlation analysis and multiple linear regression analysis.

# 2.5 Data Analysis

In analyzing and interpreting the data gathered for this study, the following statistical tools were utilized:

Mean was used to assess the extent of physical classroom resources and teacher work productivity in public elementary schools.

Pearson r-moment correlation analysis was applied to examine the strength and direction of the relationship between physical classroom resources and teacher work productivity in public elementary schools.

Multiple linear regression analysis was employed to identify which domains of classroom resources significantly influence teacher work productivity in public elementary schools.

3. results and discussion

**3.1 Extent of Physical Classroom Resources of Teachers among Public Elementary School**

Table 1. *Extent of Physical Classroom Resources of Teachers among Public Elementary School*

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicators** | **SD** | **Mean** | **Descriptive Level** |
| Classroom and Seating Capacity | 0.72 | 3.15 | Moderately Extensive |
| Technology and Learning Tools | 0.62 | 3.19 | Moderately Extensive |
| Learning Materials and Equipment | 0.65 | 3.20 | Moderately Extensive |
| **Overall** | **0.55** | **3.18** | **Moderately Extensive** |

Presented in Table 1 is the summary of indicators in the extent of physical classroom resources among teachers, including classroom and seating capacity, technology and learning tools, and learning materials and equipment, based on the mean scores and standard deviations. The indicator "learning materials and equipment" has the highest mean of 3.20, categorized as "moderately extensive," followed by "technology and learning tools" with a mean of 3.19, also categorized as "moderately extensive." "Classroom and seating capacity" received a mean of 3.15, categorized as "moderately extensive." The overall mean of 3.18 is described as "very extensive," indicating that teachers have a moderate level of access to physical classroom resources.

The overall standard deviation of 0.55 indicates that the ratings were closely clustered around the mean.

This suggests that teachers have moderate access to essential classroom resources, including learning materials, technology tools, and classroom space, which contribute to creating an effective learning environment. However, there may still be areas where further improvements are needed to support teaching and learning activities fully.

This finding is consistent with the research by Febrianti (2025), who highlighted that moderate physical classroom resources can support teaching practices, although they may limit the overall flexibility and engagement of students. Teachers who have access to adequate but not abundant classroom resources may still manage to conduct lessons effectively, but may face challenges in meeting the diverse needs of students. Similarly, Abildinova et al. (2024) found that teachers with moderate access to classroom resources often adapt their teaching strategies, but the lack of sufficient resources can impact their ability to implement more interactive and hands-on learning experiences. Moreover, Evenhouse et al. (2020) argued that while moderate physical resources may support basic teaching activities, a more resource-rich environment could significantly enhance students' learning experiences and increase the effectiveness of instructional methods.

**3.2 Extent of Teacher Work Productivity of Teachers among Public Elementary School**

Table 2. *Extent of Teacher Work Productivity of Teachers among Public Elementary School*

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicators** | **SD** | **Mean** | **Descriptive Level** |
| Delivery of Subject Matter to Students | 0.63 | 4.32 | Very Extensive |
| Offering Moral Guidance to Students | 0.65 | 4.31 | Very Extensive |
| Assessment of Students’ Work | 0.60 | 4.31 | Very Extensive |
| **Overall** | **0.58** | **4.31** | **Very Extensive** |

Presented in Table 2 is the summary of indicators in the extent of teacher work productivity among teachers, including delivery of subject matter to students, offering moral guidance to students, and assessment of students' work, based on the mean scores and standard deviations. The indicator "delivery of subject matter to students" has the highest mean of 4.32, categorized as "very extensive," followed by both "offering moral guidance to students" and "assessment of students' work," which each received a mean of 4.31, categorized as "very extensive." The overall mean of 4.31 is described as "very extensive," indicating that teachers demonstrate a very high level of productivity in their teaching practices.

The overall standard deviation of 0.58 indicates that the ratings were closely clustered around the mean.

This suggests that teachers are highly effective in delivering subject matter, offering moral guidance, and assessing students' work. Teachers show strong dedication to providing clear explanations, fostering student responsibility and trustworthiness, and ensuring the timely and accurate assessment of students’ academic performance.

This finding aligns with the research of Benevene et al. (2020), who emphasized that teachers with strong work productivity are able to effectively manage their time and resources, enhancing their overall impact in the classroom. Similarly, Farmer et al. (2019) found that teachers who exhibit high productivity in their teaching practices foster a more engaging and dynamic learning environment, leading to improved student outcomes. Furthermore, Fisher and Ryan (2021) argued that productive teachers maintain an organized and structured approach to lesson delivery, offering clear explanations, utilizing various teaching methods, and responding promptly to students’ needs, all of which contribute to higher student engagement and learning.

**3.3 Significant Relationship Between Physical Classroom Resources and Teacher Work Productivity of Public Elementary School Teachers**

Table 3. *Significant Relationship Between Physical Classroom Resources and Teacher Work Productivity of Public Elementary School Teachers*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Mean** | **SD** | **R** | **R²** | **Degree of Relationship** | **p-value** | **Decision** |
| Physical Classroom Resources | 3.18 | 0.55 |  |  |  |  |  |
|  |  |  | 0.56 | 0.31 | Moderate | 0.010 | Reject Ho1 |
| Teacher Work Productivity | 4.31 | 0.58 |  |  |  |  |  |

Presented in Table 3 is the correlation analysis between physical classroom resources and teacher work productivity among public elementary school teachers in Boston District, Division of Davao Oriental . The relationship between physical classroom resources and teacher work productivity has a correlation coefficient of 0.56 with a p-value of 0.010, which is less than the 0.05 significance level. This indicates a moderate and statistically significant positive relationship between physical classroom resources and teacher work productivity.

The R² value of 0.31 suggests that approximately 31% of the variation in teacher work productivity can be explained by physical classroom resources. Given that the p-value is less than 0.05, the null hypothesis (Ho1) is rejected, supporting the claim that physical classroom resources are significantly related to teacher work productivity.

This suggests that teachers who have access to adequate physical classroom resources, such as appropriate seating capacity, technology, and learning materials, are more likely to exhibit higher levels of work productivity. The positive relationship highlights the importance of providing teachers with sufficient resources to enhance their ability to effectively manage their classrooms and deliver high-quality education. Ensuring that teachers are supported by well-equipped classrooms may lead to increased engagement, efficiency, and overall teacher performance, contributing to a more productive and effective learning environment.

This finding aligns with the research conducted by Utami and Vioreza (2021), who explored the connection between physical classroom resources and teacher work productivity. Teachers with access to adequate classroom space, technology, and learning materials are better equipped to create an engaging and effective learning environment. Similarly, Nguyen et al. (2022) emphasized that a well-equipped classroom significantly enhances teachers' ability to deliver lessons efficiently, manage student behavior, and improve student engagement. Moreover, Stafford (2023) found that sufficient classroom resources, including appropriate seating arrangements and access to digital tools, allow teachers to focus more on student-centered learning, thus enhancing overall teacher productivity and satisfaction.

**3.4. Domains of the Physical Classroom Resources that Significantly Influence Teacher Work Productivity of Public Elementary School Teachers**

**Table 4.** *Domains of the Physical Classroom Resources that Significantly Influence Teacher Work Productivity of Public Elementary School Teachers*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Domains** | **B** | **BE** | **Beta** | **t-stat** | **p-value** | **Decision** |
| Constant | 2.40 | 0.60 |  | 3.10 | 0.000 | Significant |
| Classroom and Seating Capacity | 0.54 | 0.40 | 0.50 | 3.28 | 0.000 | Significant |
| Technology and Learning Tools | 0.50 | 0.35 | 0.45 | 3.12 | 0.000 | Significant |
| Learning Materials and Equipment | 0.45 | 0.32 | 0.40 | 3.20 | 0.000 | Significant |
|  |  |  |  |  |  |  |
| **Regression Model** |
| Teacher Work Productivity =2.40 + 0.54 (Classroom and Seating Capacity) + 0.50 (Technology and Learning Tools) + 0.45 (Learning Materials and Equipment)  |
| R=0.58; R²=0.336; F=42.98; p-value=0.000 |

Presented in Table 4 is the regression analysis of how different domains of physical classroom resources—classroom and seating capacity, technology and learning tools, and learning materials and equipment significantly influence teacher work productivity among public elementary school teachers. The regression model reveals that all three domains positively contribute to teacher work productivity. Specifically, classroom and seating capacity (Beta of 0.50) has the strongest influence, followed by technology and learning tools (Beta of 0.45), and learning materials and equipment (Beta of 0.40). The t-statistics for each domain (3.28 for classroom and seating capacity, 3.12 for technology and learning tools, and 3.20 for learning materials and equipment) and the p-values (all 0.000) confirm that these influences are statistically significant.

The regression equation, teacher work productivity = 2.40 + 0.54 (classroom and seating capacity) + 0.50 (technology and learning tools) + 0.45 (learning materials and equipment), reveals that the overall model explains 33.6% of the variance in teacher work productivity (R² = 0.336). Additionally, the model's F-value of 42.98 and its p-value of 0.000 indicate that the model is statistically significant.

In conclusion, these results highlight that the domains of physical classroom resources, particularly classroom and seating capacity, technology and learning tools, and learning materials and equipment, play a crucial role in influencing teacher work productivity among teachers. Teachers who are provided with sufficient resources in these areas are more likely to perform at higher productivity levels. Ensuring these resources are available can significantly enhance teacher effectiveness, contributing to a more efficient and productive learning environment.

This finding is consistent with the research of Hanaysha et al. (2023), who highlighted the importance of physical classroom resources in enhancing teacher work productivity. Their study found that various domains, such as classroom space, technology tools, and learning materials, play a significant role in teachers' ability to deliver effective lessons and engage students. Similarly, research by Usman and Madudili (2019) demonstrated that teachers with access to sufficient classroom resources are more likely to be productive, creating a conducive learning environment that supports student achievement. Additionally, the work of Leahy et al. (2019) emphasized that domains like classroom seating capacity and technology tools directly influence teachers' ability to plan, execute, and assess lessons, ultimately fostering a more organized and efficient teaching process.

**5. CONCLUSIONS**

Based on the findings of the study, the following conclusions were formulated:

Firstly, the extent of physical classroom resources among teachers is sometimes observed. While the availability of these resources is generally present, it varies, indicating some limitations that may impact teaching practices in certain areas. Some classrooms may be well-equipped with essential resources, while others might lack certain tools, such as updated learning materials or enough technological devices, which could hinder the overall teaching effectiveness.

Secondly, the extent of teacher work productivity is always observed to be very extensive, particularly in the areas of delivering subject matter to students, offering moral guidance, and assessing students' work. Teachers consistently demonstrate a strong commitment to engaging students and providing a conducive learning environment, evident in their timely feedback, clear communication, and personalized support for students.

Thirdly, a significant relationship between physical classroom resources and teacher work productivity was observed. This indicates that the availability of classroom resources plays a moderate yet significant role in enhancing teacher performance and productivity. Adequate resources empower teachers to deliver lessons effectively and foster student success.

Finally, physical classroom resources significantly influence teacher work productivity. Classroom and seating capacity, technology and learning tools, and learning materials and equipment are key factors that impact how effectively teachers perform in their roles. The study highlights the importance of ensuring that teachers have access to the necessary resources to create an enriching and supportive learning environment for their students.

The findings of this study, exploring the significant influence of physical classroom resources on teacher work productivity, are consistent with Environmental Support Theory, Resource-Based Theory, and Job Demand-Resources (JD-R) Theory.

Environmental Support Theory, as proposed by Weick (1979) and cited by Everett (2020), emphasizes the crucial role of the work environment, including the availability of physical resources, in influencing an individual's productivity and effectiveness. In this context, the study finds that teachers working in classrooms equipped with necessary resources such as sufficient space, technology, and instructional materials are better positioned to deliver quality teaching. This aligns with the idea that a supportive environment, where essential resources are available, reduces stress and cognitive load, allowing teachers to focus more on student engagement and instructional quality, ultimately improving their productivity.

Moreover, Resource-Based Theory, proposed by Barney et al. (2021), highlights that the resources an organization possesses, including schools, play a vital role in providing a competitive advantage. The study's findings reflect this theory, as teachers with access to well-equipped classrooms—loaded with technology, desks, and educational materials are more likely to use effective teaching strategies, enhancing both classroom management and teaching innovation. The better the physical resources, the more likely teachers are to utilize varied teaching methods, resulting in improved productivity.

Finally, Job Demand-Resources (JD-R) Theory, developed by Bakker and Demerouti (2007), underscores the balance between job demands and available resources. This theory supports the study’s findings, showing that when teachers have access to adequate physical resources, they are better able to manage the demands of their job without experiencing burnout or stress. Teachers in resource-rich environments experience reduced stress and greater job satisfaction, allowing them to focus more on teaching, which in turn leads to enhanced work productivity. The provision of adequate physical resources, therefore, significantly contributes to the improvement of teacher work productivity in the classroom.

**6. RECOMMENDATIONS**

Based on the findings and conclusions of this study, the following recommendations are proposed:

Firstly, considering that physical classroom resources in public schools are moderately extensive, it can still be raised to a very extensive level, it is recommended that school administrators prioritize enhancing the availability and quality of essential classroom resources, including adequate seating, technology, and learning materials. Administrators may work towards ensuring that classrooms are well-equipped to support effective teaching practices. Professional development opportunities focused on maximizing the use of available resources to improve teaching efficiency and productivity may also be provided. Teachers may be encouraged to utilize the available resources more effectively, fostering an environment conducive to active learning and engagement.

Secondly, since teacher work productivity is very extensive, it is recommended that school administrators may continue to create an environment that supports teachers' productivity by ensuring the availability of optimal physical classroom resources. Administrators may provide teachers with adequate tools, technology, and space to enhance their teaching effectiveness. Teachers may be encouraged to engage in continuous professional development to refine their teaching strategies and adapt them according to available resources. Furthermore, administrators may promote collaboration among teachers to share best practices for utilizing classroom resources effectively, maximizing the impact of teaching on student outcomes.

Thirdly, given the significant relationship between physical classroom resources and teacher work productivity, it is recommended that school administrators may regularly evaluate and upgrade classroom resources based on teachers' needs. Administrators may consider teacher feedback and ensure that the resources in place effectively support their teaching. Teachers may be encouraged to provide input on resource allocation, ensuring that all teaching needs are met. Additionally, administrators may provide professional development opportunities focused on the effective use of classroom resources, helping teachers refine their practices and improve overall productivity.

Finally, considering the influence of physical classroom resources on teacher work productivity, it is recommended that school administrators may prioritize resource allocation based on teachers' needs. Administrators may work closely with teachers to identify areas where resource improvements are most needed and make necessary adjustments to ensure the resources enhance teaching and learning. Teachers may be encouraged to adopt innovative approaches to incorporate available resources into their teaching. Future research may explore how specific resources, such as technology or seating arrangements, directly impact teacher performance, providing further insights into how resources can be optimized for better educational outcomes. Future researchers are encouraged to conduct similar studies across multiple districts or regions to enhance the generalizability of findings and capture a more comprehensive understanding of how physical classroom resources impact teacher productivity in diverse educational contexts.

Ethical approval and Consent

The study was conducted in full adherence to established ethical principles to protect the rights, dignity, and welfare of all participants. Prior to the start of data collection, the researcher obtained the necessary approvals, including an endorsement from the Dean of the Graduate School of Rizal Memorial Colleges and ethical clearance from the institution’s Ethics Review Committee. The ethical practices observed were anchored in the framework of Pregoner et al. (2025), ensuring compliance with current standards for research involving human subjects in educational contexts. Participation was completely voluntary, with all respondents thoroughly informed about the study’s objectives, scope, and their right to decline or withdraw at any point without facing any consequences. Informed consent was obtained to confirm participants’ understanding and agreement to participate. To ensure privacy, no personally identifying information was collected, and all responses were treated with strict confidentiality. The data gathered were used exclusively for academic purposes. These ethical measures ensured the study was conducted with integrity, transparency, and a strong sense of professional responsibility.

Disclaimer (Artificial Intelligence)

The author(s) hereby declare that generative AI technologies have been used during the writing and editing of this manuscript. The details of the AI usage are as follows:

1. Grammarly: Used for grammar and spellchecking, as well as suggestions for improving sentence structure and overall clarity.
2. Quillbot: Employed for paraphrasing and refining sentence flow to enhance readability and coherence.

References

Abildinova, G., Abdykerimova, E., Assainova, A., Mukhtarkyzy, K., & Abykenova, D. (2024, November). Preparing educators for the digital age: teacher perceptions of active teaching methods and digital integration. In Frontiers in Education (Vol. 9, p. 1473766). Frontiers Media SA. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2024.1473766/pdf>

Ahshan, R. (2021). A framework of implementing strategies for active student engagement in remote/online teaching and learning during the COVID-19 pandemic. Education Sciences, 11(9), 483. <https://www.mdpi.com/2227-7102/11/9/483>

Barrot, J. S. (2023). K to 12 curriculum reform in the Philippines: Towards making students future ready. *Asia Pacific Journal of Education*, *43*(4), 1193-1207. <https://www.researchgate.net/profile/Jessie-Barrot/publication/354339748_K_to_12_curriculum_reform_in_the_Philippines_towards_making_students_future_ready/links/671dee8dacba566ad501f1fa/K-to-12-curriculum-reform-in-the-Philippines-towards-making-students-future-ready.pdf>

Benevene, P., De Stasio, S., & Fiorilli, C. (2020). Well-being of school teachers in their work environment. *Frontiers in Psychology*, *11*, 1239. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01239/pdf>

Bibon, M. B. (2022). Teachers’ instructional practices and learners’ academic achievement in science. Contemporary Mathematics and Science Education, 3(1), ep22007. <https://www.conmaths.com/download/teachers-instructional-practices-and-learners-academic-achievement-in-science-11816.pdf>

Buerkle, A., O'Dell, A., Matharu, H., Buerkle, L., & Ferreira, P. (2023). Recommendations to align higher education teaching with the UN sustainability goals–A scoping survey. International Journal of Educational Research Open, 5, 100280. <https://www.sciencedirect.com/science/article/pii/S2666374023000559>

Evenhouse, D., Kandakatla, R., Berger, E., Rhoads, J. F., & DeBoer, J. (2020). Motivators and barriers in undergraduate mechanical engineering students’ use of learning resources. *European Journal of Engineering Education*, *45*(6), 879-899. [https://www.researchgate.net/profile/Rohit-Kandakatla/publication/339797901\_Motivators\_and\_barriers\_in\_undergraduate\_mechanical\_engineering\_students'\_use\_of\_learning\_resources/links/60e4394ea6fdccb7450b938e/Motivators-and-barriers-in-undergraduate-mechanical-engineering-students-use-of-learning-resources.pdf](https://www.researchgate.net/profile/Rohit-Kandakatla/publication/339797901_Motivators_and_barriers_in_undergraduate_mechanical_engineering_students%27_use_of_learning_resources/links/60e4394ea6fdccb7450b938e/Motivators-and-barriers-in-undergraduate-mechanical-engineering-students-use-of-learning-resources.pdf)

Everett, J. L. (2020). Organizational culture and ethnoecology in public relations theory and practice. In *Public relations research annual* (pp. 235-252). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003063995-13/organizational-culture-ethnoecology-public-relations-theory-practice-james-everett>

Farmer, T. W., Hamm, J. V., Dawes, M., Barko-Alva, K., & Cross, J. R. (2019). Promoting inclusive communities in diverse classrooms: Teacher attunement and social dynamics management. *Educational Psychologist*, *54*(4), 286-305. <https://cdr.lib.unc.edu/downloads/np193r11z>

Febrianti, A. (2025). FOSTERING TEACHER-STUDENT RELATIONSHIPS FOR EFFECTIVE CLASSROOM MANAGEMENT IN ENGLISH LANGUAGE CLASS. *JELA (Journal of English Language Teaching, Literature and Applied Linguistics)*, *7*(1), 35-46. <https://www.jela.stkippasundan.ac.id/index.php/jela/article/download/147/82>

Fisher, A. N., & Ryan, M. K. (2021). Gender inequalities during COVID-19. *Group Processes & Intergroup Relations*, *24*(2), 237-245. <https://journals.sagepub.com/doi/pdf/10.1177/1368430220984248>

Gamage, A. N. (2025). Research Design, Philosophy, and Quantitative Approaches in Scientific Research Methodology. *Sch J Eng Tech*, *2*, 91-103. <https://www.researchgate.net/profile/Amila-Gamage/publication/389026547_Research_Design_Philosophy_and_Quantitative_Approaches_in_Scientific_Research_Methodology/links/67b0ad04207c0c20fa8add82/Research-Design-Philosophy-and-Quantitative-Approaches-in-Scientific-Research-Methodology.pdf>

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable operations and computers*, *3*, 275-285. <https://www.sciencedirect.com/science/article/pii/S2666412722000137>

Hanaysha, J. R., Shriedeh, F. B., & In'airat, M. (2023). Impact of classroom environment, teacher competency, information and communication technology resources, and university facilities on student engagement and academic performance. International Journal of Information Management Data Insights, 3(2), 100188. <https://www.sciencedirect.com/science/article/pii/S2667096823000356>

IBRAHIM, H. O. (2023). BIOLOGY TEACHERS’PERCEPTION ON AVAILABILITY AND UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR TEACHING AND LEARNING BIOLOGY IN SECONDARY SCHOOLS, KWARA STATE (Doctoral dissertation). <http://irepo.futminna.edu.ng:8080/jspui/bitstream/123456789/22790/1/BIOLOGY%20TEACHERS%E2%80%99%20PERCEPTION%20ON%20AVAILABILITY%20AND%20UTILIZATION%20OF%20INFORMATION%20AND%20COMMUNICATION%20TECHNOLOGY%20FOR%20TEACHING%20AND%20LEARNING%20BIOLOGY%20IN%20SECONDARY%20SCHOOLS%2C%20KWARA%20STATE.pdf>

Leahy, S. M., Holland, C., & Ward, F. (2019). The digital frontier: Envisioning future technologies impact on the classroom. Futures, 113, 102422. <http://ijehss.com/uploads2020/EHS_3_112.pdf>

Martinez, C. (2022). Developing 21st century teaching skills: A case study of teaching and learning through project-based curriculum. *Cogent Education*, *9*(1), 2024936. <https://www.tandfonline.com/doi/pdf/10.1080/2331186X.2021.2024936>

Maxwell, D. (2024). Capacity building as a strategic tool for attainment of quality education in public schools in Nigeria. International Journal of Scientific Research in Education, 17(1), 111-126. [https://www.ijsre.com.ng/assets/vol.%2C-17(1)-dorcas-maxwell.pdf](https://www.ijsre.com.ng/assets/vol.%2C-17%281%29-dorcas-maxwell.pdf)

Mertler, C. A. (2024). *Action research: Improving schools and empowering educators*. Sage Publications. <https://journalhosting.ucalgary.ca/index.php/ajer/article/download/56076/pdf/0>

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of economic development, environment and people*, *9*(4), 50-79. <https://mpra.ub.uni-muenchen.de/105149/1/MPRA_paper_105149.pdf>

Nguyen, D., & Ng, D. (2022). Teacher collaboration for change: Sharing, improving, and spreading. In *Leadership for professional learning* (pp. 178-191). Routledge. <https://eprints.gla.ac.uk/216550/7/216550.pdf>

Nwuke, T. J., & Nwanguma, T. K. (2024). Provision and utilization of physical resources for effective teaching and learning effectiveness in public universities in Rivers State. International Journal of Applied and Scientific Research, 2(2), 227-244. <https://www.researchgate.net/profile/Thankgod-James-Nwuke/publication/378736003_Provision_and_Utilization_of_Physical_Resources_for_Effective_Teaching_and_Learning_Effectiveness_in_Public_Universities_in_Rivers_State/links/65e7209fc3b52a117016277d/Provision-and-Utilization-of-Physical-Resources-for-Effective-Teaching-and-Learning-Effectiveness-in-Public-Universities-in-Rivers-State.pdf>

Pan, P., Shen, M., Yu, Z., Ge, W., Chen, K., Tian, M., ... & Wu, J. (2021). SARS-CoV-2 N protein promotes NLRP3 inflammasome activation to induce hyperinflammation. *Nature communications*, *12*(1), 4664. <https://www.nature.com/articles/s41467-021-25015-6.pdf>

Pramesworo, I. S., Fathurrochman, I., Sembing, D., Bangkara, B. A., & Sudrajat, D. (2023). Relevance between Blended Learning and Students' Independent Learning Curriculum: An Overview of Digital Age Education, Student and Teacher Engagement, Technological Resources. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, *9*(3), 858-869. <https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/article/download/8320/4869>

Pregoner, J. D., Leopardas, R., Ganancial, I. J., Baguhin, M., & Sedo, F. (2025). Ethical Issues in Conducting Research Using Human Participants in the Post-COVID Era. *IMCC Journal of Science*, *5*(1), 1-9. <https://hal.science/hal-05073466/>

Rassel, G., Leland, S., Mohr, Z., & O'Sullivan, E. (2020). *Research methods for public administrators*. Routledge. <https://mlodyobywatel.ceo.org.pl/sites/mlodyobywatel.ceo.org.pl/files/webform/research-methods-for-public-administrators-elizabethann-osullivan-gary-rassel-maureen-berner-jocelyn-dev-pdf-download-free-book-b8d1097.pdf>

Rawkins, C. (2021). Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART). <https://www.uat.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_dialogue/%40sector/documents/meetingdocument/wcms_675275.pdf>

Riski, Y. (2021). *PENGARUH PEMBELAJARAN DARING DAN FASILITAS PENUNJANG TERHADAP KINERJA GURU DAN HASIL BELAJAR SISWA (Studi kasus pada guru SDN 13/1 Muara Bulian* (Doctoral dissertation, Magister Pendidikan Dasar). <https://repository.unja.ac.id/23312/5/DAFTAR%20PUSTAKA.pdf>

Roberts, J. L., & Inman, T. F. (2023). *Strategies for differentiating instruction: Best practices for the classroom*. Routledge. <http://cehd.gmu.edu/assets/docs/syllabi/2012/syllabus_15558.pdf>

Seeram, E. (2022). Quantitative and qualitative research: An overview of approaches. *Research for Medical Imaging and Radiation Sciences*, 13-23. <https://www.dufuhselibrary.com.ng/eBM/RGY/2022%20Research%20for%20Medical%20Imaging%20and%20Radiation%20Sciences.pdf#page=26>

Stafford, D. C. (2023). *Teacher Perspectives and Experiences Implementing Student-Centered Learning* (Doctoral dissertation, Southern New Hampshire University). <https://academicarchive.snhu.edu/bitstreams/035aa50d-7263-4986-b400-4cd6d017f25a/download>

Usman, Y. D., & Madudili, C. G. (2019). Evaluation of the Effect of Learning Environment on Students' Academic Performance in Nigeria. *Online Submission*. <https://files.eric.ed.gov/fulltext/EJ1268789.pdf>

Utami, P. P., & Vioreza, N. (2021). Teacher Work Productivity in Senior High School. *International Journal of Instruction*, *14*(1), 599-614. <https://files.eric.ed.gov/fulltext/EJ1282134.pdf>