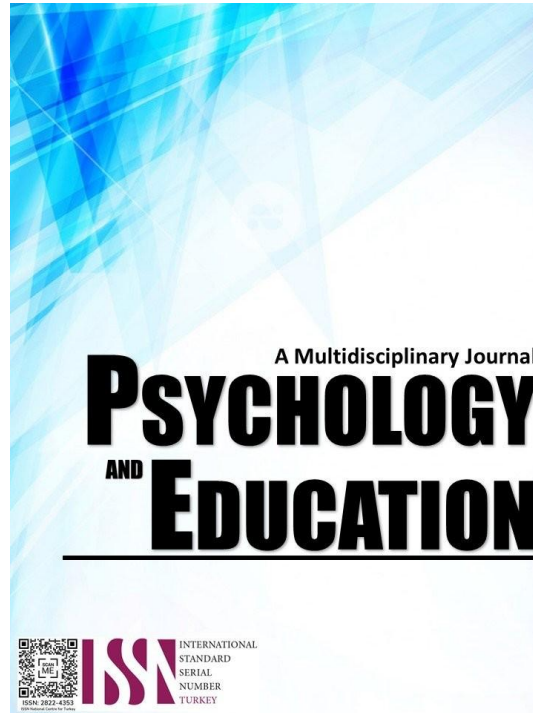


AVAILABILITY OF CLASSROOM RESOURCES AND TEACHERS' ABILITY TO IMPLEMENT INNOVATIVE TEACHING METHODS



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Availability of Classroom Resources and Teachers' Ability to Implement Innovative Teaching Methods

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Abstract

This study examined the availability of classroom resources and their influence on the ability of public elementary school teachers to implement innovative teaching methods. Specifically, it assessed the degree of availability of physical and technological resources, the level of teachers' innovative capacity in terms of attitude, skills, and implementation, and the relationship between these variables. A descriptive-correlational research design was employed, involving 125 teachers selected through stratified random sampling from various schools in the Maramag II District, Division of Bukidnon. Data were gathered using a researcher-developed, standardized survey instrument with high internal reliability (Cronbach's alpha = 0.932 for resource availability and 0.937 for innovation capacity). Data analysis employed descriptive statistics, Pearson correlation, and multiple regression analysis. Findings revealed that classroom resources were generally "usually available," with physical resources ($M = 3.91$) rated slightly more accessible than technological ones ($M = 3.45$). Teachers exhibited a "very highly competent" level of innovative capacity ($M = 4.32$), with the strongest scores in attitude toward innovation. A significant moderate positive correlation ($r = 0.483$, $p < 0.01$) between classroom resource availability and innovative capacity was found. Furthermore, regression analysis confirmed that physical ($\beta = 0.279$, $p = 0.006$) and technological resources ($\beta = 0.263$, $p = 0.009$) were significant predictors, explaining 23.5% of the variance in teachers' innovative capacity. These results underscore the importance of equipping teachers with adequate resources to foster innovation in classroom practice. The study recommends targeted investments in instructional tools and professional development to support innovation in public elementary education.

Keywords: *classroom resources, innovative capacity, physical resources, technological resources, public elementary teachers, teaching innovation*

Introduction

As education serves as the primary catalyst for improving our society, an elementary school teacher's ability to employ innovative teaching approaches is crucial for promoting student engagement and achieving positive learning outcomes. In the educational setting, there is no single definition of innovation; it takes numerous shapes. The key to educational innovation is for leaders and teachers to be willing to look at potential problems from a new perspective and discover ways to improve the learning experience (The Global College, 2023).

However, studies have shown that teachers' unwillingness to change their way of teaching and evaluation, lack of proper teacher training, and lack of flexibility in the curriculum were the significant challenges to innovative practices in the teaching-learning process, added by the generation gap between the teachers and the students as the teacher was born in the early stage of the digital revolution and prefer to teach traditionally (Boruah & Baruah, 2024). For instance, there are various challenges to effective EduTech adoption, including a lack of infrastructure, teacher training, money, the digital divide, opposition to change, and technological difficulties (Mastul et al., 2023).

An efficient learning environment goes beyond the actual layout of desks. Even if classroom materials include tools, technologies, and teaching strategies meant to enhance the learning process, carefully chosen materials suitable for student needs and learning styles should also be used, including visual aids that support concepts, interactive displays that grab attention, exciting technology tools, and additional materials that advance learning (Aamir, 2023).

However, there needs to be more fundamental amenities in schools in the Philippines; approximately 5,000 schools need access to electricity, and 10,000 need access to potable water, making delivering quality education significantly problematic, especially in rural areas (Bai, 2023). Bai (2023) claims that many schools' inadequate classrooms, courses, and teaching tools make it difficult for students to study successfully.

These are also evident in a Pulse Asia survey where 52% of the 1,200 respondents identified the lack of classrooms as the top issue to be immediately addressed by the DepEd, followed by a lack of school learning resources like books and computers for 49% and a lack of teachers for 45% (Gregorio, 2023).

For these reasons, the researcher conducted this study. This study sought to analyze the impact of classroom resources on elementary teachers' ability to apply innovative teaching methods. As a result, this study may be the basis for shaping teacher training programs and resource allocation regulations and contributing to the current conversation concerning successful teaching practices in elementary education.

Research Questions

This study sought to assess the impact of classroom resources on elementary teachers' ability to implement innovative teaching methods. Mainly, this study aimed to answer the following questions:

1. What is the demographic profile of elementary teachers in public schools in terms of years of teaching experience, grade level taught, and educational attainment?
2. What is the degree of availability of classroom resources of public elementary school teachers in terms of physical and technological resources?
3. What is the level of the innovative capacity of public elementary school teachers in terms of attitude towards innovation, skills and knowledge for innovation, and implementation of innovative methods?
4. Is there a significant relationship between the degree of availability of classroom resources and the innovative capacity of public elementary school teachers?
5. Does the degree of availability of classroom resources significantly predict the innovative capacity of public elementary school teachers?

Methodology

Research Design

The study utilized a correlational, cross-sectional research approach to find the relationship between classroom resources and primary teachers' capacity to apply creative teaching approaches. In this quantitative study, data were collected simultaneously to investigate how varied types and availability of classroom resources affect teachers' self-reported ability to adopt and apply innovative teaching approaches. After the retrieval of responses, the data were tabulated, organized, and analyzed to answer the problem posed in the earlier chapters. The researcher then used correlation and regression analysis to determine if there is a significant relationship between classroom resources and teacher innovation capacity, and if classroom resources significantly predict the teacher innovation capacity of elementary teachers in public schools.

Respondents

The study's respondents were public elementary school teachers in the Maramag II District administrative area in Maramag, Bukidnon. This study will use Yamane's formula, also known as Slovin's formula, to find the appropriate sample size for a population. The sample size will be approximately 125 elementary teachers using a 5% margin of error.

Procedure

Data Gathering Procedure

Before collecting data for this study, the researcher created a questionnaire that included a demographic profile and Likert scales for the availability of classroom resources and the capacity of teachers to innovate. The questionnaire was then subjected to pilot testing with a small group of elementary teachers to assess its reliability.

To guarantee the research follows ethical standards regarding participant consent, confidentiality, and data handling procedures, the researcher asked via a request letter to the appropriate offices, including the office of the school district Supervisor and the school principals of the schools included within Maramag II District, to request approval for the launch and retrieval of data.

The researcher administered the standardized survey questionnaire in person during designated periods, subject to approval. Subsequently, the researcher documented and organized the retrieved questionnaires into tabular form, which was discussed, analyzed, and interpreted.

Data Analysis

The researcher used the following statistical techniques to answer each problem statement.

First, a frequency count was used to describe the demographic profile of elementary teachers in public schools. Second, mean and standard deviation were utilized to determine the degree of availability of classroom resources and the level of innovative capacity of public elementary school teachers. Third, correlation analysis was used to determine the relationship between the degree of availability of classroom resources and the innovative capacity of public elementary school teachers. Fourth, regression analysis was used to determine whether the degree of availability of classroom resources predicts the innovative capacity of public elementary school teachers.

Ethical Considerations

This study adhered to ethical standards in the conduct of educational research involving human participants. Before data collection, authorization to conduct the study was obtained from the relevant school authorities. Respondents were assured their involvement was voluntary and told of the aim of the study, with the option to withdraw at any time without consequence.

Anonymity and confidentiality were strictly observed; no identifying information was collected, and the responses were used solely for academic purposes. The standardized survey instrument used in the study was designed to avoid any intrusive or sensitive questions, ensuring respect for the respondents' privacy and professional integrity. All procedures complied with ethical guidelines to protect the teacher participants' rights, welfare, and dignity throughout the research process.

Results and Discussion

This section displays the presentation, analysis, and interpretation of the results for each problem statement, providing essential insights and understanding that form the basis for the conclusions and recommendations.

The demographic profile of elementary teachers in public schools provides important insights into their professional background and qualifications. The following sections discuss key factors such as years of teaching experience, grade level taught, and educational attainment.

Table 1 shows the demographic profile of public elementary school teachers based on their years of teaching experience. The data provides the distribution (both the frequency and the percentage) of teachers in four different intervals of years of teaching that sum up to the intended sample size.

Table 1. *Public elementary school teachers' demographic profile in terms of years of teaching*

<i>Years of teaching</i>	<i>Frequency</i>	<i>Percent</i>
1-5 years	30	24.00
6-10 years	37	29.60
11-15 years	16	12.80
16+ years	42	33.60
Total	125	100

Table 1 shows the distribution of public elementary school teachers according to their years of teaching experience. The majority of respondents (33.60%) have been teaching for more than 16 years, followed by those with 6–10 years of experience (29.60%). Teachers with 1–5 years of experience comprised 24.00% of the sample, while those with 11–15 years comprised the smallest group at 12.80%.

The data suggest a relatively experienced teaching workforce, with a significant portion of teachers (approximately 46.4%) having over 10 years of teaching experience. The presence of newer teachers (1–5 years) also indicates some degree of generational diversity in the profession. The broad distribution across experience levels reflects a mix of early-career, mid-career, and veteran teachers.

This composition may contribute to a dynamic exchange of teaching practices, where experienced teachers offer wisdom and stability, while newer ones may bring fresh ideas and greater openness to innovation. The higher concentration of teachers in the 6–10 and 16+ year brackets suggests that many educators have had ample opportunity to develop and refine their professional skills over time.

To support the findings about the teachers' retention, the study of Morton and Maresh (2024) concluded that teacher shortages have been a problem for years, but the surge in teachers leaving the profession since the COVID-19 pandemic is profoundly worrying. In 2020, 65.6% of teachers reported that they were considering quitting or had already done so. By 2021, that number had jumped to 76.5%, showing a dramatic increase in teachers contemplating departure. Notably, the reasons why participants considered leaving education were due to stress and burnout, behavioral issues of students causing trauma, insufficient support, and politics from the administration.

Understanding teachers' years of teaching experience is essential in contextualizing their innovative capacity. Veteran educators may rely on established practices, while newer teachers may be more adaptive to change. This demographic insight helps school administrators and professional development planners design differentiated training programs that align with teachers' career stages, maximizing the effectiveness of innovation initiatives.

Table 2 shows the demographic profile of public elementary school teachers based on the grade levels they teach. The data shows the number and percentage of teachers assigned to each grade level, ranging from Kindergarten through Grade 6.

Table 2. *Public elementary school teachers' demographic profile in terms of the grade level taught*

<i>Grade level taught</i>	<i>Frequency</i>	<i>Percent</i>
Kindergarten	18	14.40
Grade 1	22	17.60
Grade 2	19	15.20
Grade 3	25	20.00
Grade 4	16	12.80
Grade 5	19	15.20
Grade 6	6	4.80
Total	125	100

Table 2 presents the distribution of public elementary school teachers by grade level taught. The highest proportion of teachers was assigned to Grade 3 (20.00%), followed by Grade 1 (17.60%) and Grade 2 (15.20%). Kindergarten teachers comprise 14.40% of the sample, while Grade 4 and Grade 5 each account for 12.80% and 15.20%, respectively. The smallest group teaches Grade 6, comprising only 4.80% of the respondents.

The data show a relatively even distribution of teaching assignments across early to mid-grade levels, with fewer teachers at the upper elementary level, particularly Grade 6. The large proportion of teachers in Grades 1 to 3 indicates a strong presence at the foundational literacy and numeracy stages. The notably low percentage of Grade 6 teachers suggests either fewer sections at this level or a trend of more experienced teachers taking on lower grades.

This distribution implies that the focus of instructional delivery in the sampled schools leans heavily toward the early grades, where foundational learning is emphasized. Teachers at these levels often require additional support in developing engaging, age-appropriate methods and materials that are particularly relevant to innovative teaching. The smaller number of Grade 6 teachers may also affect the sharing of innovation practices across grade levels, particularly in upper-grade content areas.

In connection to assigning teachers across grade levels, Bouffard (2023) noted that to help students learn more quickly with the proper support, teachers need a solid understanding of how students grow and develop over time. One way to build this knowledge is by aligning concepts and skills across grade levels, which allows teachers to see what students already know, what they've learned, and what they still need to learn.

Recognizing the grade-level distribution is important in planning innovation training and resource allocation. Since most teachers are concentrated in lower grades, professional development efforts and resource support should be tailored to the specific pedagogical needs of early learners. Educational leaders should also consider strategies to strengthen innovation in upper-grade instruction, where fewer teachers may mean less collaboration and support.

Table 3 provides the demographic profile of public elementary school teachers based on their educational attainment. The data shows the number of teachers with different academic qualifications: Bachelor's Degree, Master's Degree, and Doctorate Degree.

Table 3. Public elementary school teachers' demographic profile in terms of educational attainment

<i>Years of teaching</i>	<i>Frequency</i>	<i>Percent</i>
Bachelor's Degree	94	75.20
Master's Degree	29	23.20
Doctorate Degree	2	1.60
Total	125	100

Table 3 presents the educational attainment of public elementary school teachers. The majority of the respondents, 75.20%, hold a bachelor's degree. A smaller portion, 23.20%, has attained a master's degree, while only 1.60% hold a doctorate degree. These results indicate that while most teachers meet the minimum academic qualifications required for teaching at the elementary level, a substantial number have pursued graduate studies, showing a commitment to continuing professional development. However, advanced degrees remain relatively uncommon, with only a small fraction attaining the highest academic level.

The dominance of bachelor's degree holders suggests that many teachers may rely more on practical experience and in-service training for professional growth. Those with master's and doctorate degrees likely bring enhanced theoretical knowledge and research-based practices into their teaching, which could positively influence their capacity for innovation.

However, the relatively low proportion of graduate degree holders may indicate barriers to teachers' access to higher education, such as cost or time constraints.

To support the finding on the very limited number of teachers with a Doctoral degree, Amahido (2024) identified eight main challenges teachers face when pursuing postgraduate studies. These include managing time and commitments, dealing with financial issues, experiencing stress and anxiety, coping with academic pressure and feeling unprepared, facing financial constraints, struggling with unequal time allocation, lacking financial support, and navigating the need for support and reimbursement.

These findings are relevant for school administrators and education authorities when designing innovation programs. They highlight the need to provide accessible, ongoing training and development opportunities, especially for teachers who have not yet pursued graduate studies. Supporting academic advancement can enhance the overall professional capacity of the teaching workforce.

Classroom resources play a critical role in shaping the teaching and learning environment. The following sections examine the level of classroom resources in terms of physical resources and technology resources.

Table 4 outlines public elementary school teachers' degree of availability of classroom resources in terms of physical resources. Each indicator is assessed based on teachers' perceptions of the availability and adequacy of various physical resources that support their teaching practices. The data includes each indicator's mean score, standard deviation (SD), and qualitative interpretation.

Table 4. Public elementary school teachers' degree of availability of classroom resources in terms of physical resources

Indicator	Mean	SD	Qualitative Interpretation
1. The physical environment of my classroom is conducive to implementing innovative and collaborative learning strategies (e.g., flexible seating, space for group work).	4.31	0.73	Always available
2. The classroom is equipped with adequate furniture (e.g., desks, chairs, storage) to facilitate innovative teaching activities	4.16	0.89	Usually available
3. I have access to sufficient physical materials (e.g. textbooks, workbooks, manipulatives, art supplies) to support my teaching.	3.99	0.80	Usually available
4. I have access to adequate storage space for teaching materials and resources.	3.90	0.80	Usually available
5. I have enough educational tools and supplies to implement hands-on learning activities in my classroom	3.81	0.76	Usually available
6. The school provides enough print materials (e.g., worksheets, posters, activity sheets) for all students to use in classroom activities.	3.74	0.91	Usually available
7. I have sufficient resources to differentiate instruction for students with varying learning needs (e.g., special education, English language learners).	3.72	0.81	Usually available
8. I have access to a variety of hands-on learning materials (e.g., science kits, building blocks, art supplies) that allow me to implement interactive lessons.	3.62	0.95	Usually available
Overall	3.91	0.62	Usually available

Legend: 5 (4.20–5.00) – Strongly Agree: Always Available; 4 (3.40–4.19) – Agree: Usually Available; 3 (2.60–3.39) – Neutral: Occasionally Available; 2 (1.80–2.59) – Disagree: Rarely Available; 1 (1.00–1.79) – Strongly Disagree: Never Available

As shown in Table 4, the overall mean score for the availability of physical classroom resources was 3.91 (SD = 0.62), indicating that these resources are "usually available." The highest-rated item was the classroom's conduciveness to innovative and collaborative learning strategies ($M = 4.31$, $SD = 0.73$), categorized as "always available." Other aspects, such as adequate furniture ($M = 4.16$) and sufficient materials like textbooks and workbooks ($M = 3.99$), were also rated positively. However, the availability of hands-on learning materials received the lowest score ($M = 3.62$), still within the "usually available" range.

These results show that public elementary school classrooms generally have the basic physical resources necessary for teaching. The classroom environment appears supportive of flexible and collaborative learning strategies, and essential supplies, such as furniture and textbooks, are readily available. However, the relatively lower availability of hands-on learning materials suggests that while basic needs are met, more specialized resources that foster interactive and student-centered learning are less accessible. This could indicate that schools prioritize traditional resources and infrastructure over newer, more dynamic teaching tools that are key to innovative instructional methods.

The findings suggest that while the foundational physical resources for teaching are generally adequate, there is a gap regarding more specialized resources that enable innovative or interactive teaching methods. Although classrooms are conducive to collaboration and group work, the lack of hands-on materials limits teachers' opportunities to engage students in active, inquiry-based learning.

This aligns with existing research indicating that school infrastructure has a significant impact on student learning. Well-designed and well-equipped facilities help boost student engagement and improve learning results (Nugroho & Wibowo, 2020).

These results are important for public elementary school teachers because they reflect how their classrooms are equipped to support innovative and engaging instruction. While basic physical needs are generally met, the limited availability of hands-on materials may restrict their ability to differentiate learning or fully use active teaching methods. For school administrators and policymakers, this points to the need to invest not only in infrastructure but also in a broader range of instructional materials that promote creativity and student engagement in daily classroom activities.

Table 5 displays public elementary school teachers' perceptions of the technological resources available in their classrooms. The table includes several indicators related to the access and quality of technological tools and resources, such as modern technology, software, internet access, and devices. It includes the mean score, standard deviation (SD), and qualitative interpretation for each indicator.

As displayed in Table 5, the overall mean score for the availability of technological classroom resources was 3.45 (SD = 0.83), which falls within the category of "usually available." The highest-rated indicator was access to modern technology such as computers and interactive whiteboards ($M = 4.06$, $SD = 0.94$), followed by the availability of educational software and digital tools ($M = 3.68$), and internet access ($M = 3.64$). Items that received lower ratings included access to interactive whiteboards or digital display tools ($M = 2.90$) and the provision of enough student devices ($M = 2.99$), both of which were interpreted as "occasionally available."

These results suggest that while teachers generally have access to the basic technological tools needed for instruction, there are significant gaps in the availability of classroom-level technologies that support one-to-one learning and highly interactive lessons. The relatively high scores for general access to technology and internet connectivity reflect some progress in digital integration. However, the lower ratings for access to individual student devices and interactive whiteboards point to limitations in the depth and consistency

of technological support across classrooms.

Table 5. Public elementary school teachers' degree of availability of classroom resources in terms of technological resources

Indicator	Mean	SD	Qualitative Interpretation
1. I have access to modern technology (e.g., computers, tablets, and interactive whiteboards) that I can use to enhance my teaching.	4.06	0.94	Usually available
2. I have sufficient software and digital tools (e.g., educational apps, learning platforms) to integrate technology into my lessons.	3.68	0.92	Usually available
3. The school provides reliable internet access for classroom use.	3.64	1.11	Usually available
4. The devices and technological tools available in my classroom are up-to-date and functional for my teaching needs.	3.51	1.00	Usually available
5. The school provides adequate charging stations or solutions for students' electronic devices.	3.44	1.28	Usually available
6. I have access to a variety of educational software and online resources (e.g., eBooks, learning management systems, curriculum-based apps) for lesson planning and delivery.	3.34	1.00	Occasionally available
7. The school provides sufficient devices (e.g., laptops, tablets) for every student to use in the classroom.	2.99	1.15	Occasionally available
8. The classroom has interactive whiteboards (e.g., Smartboards) or other digital display tools for engaging lessons	2.90	1.22	Occasionally available
Overall	3.45	0.83	Usually available

Legend: 5 (4.20–5.00) – Strongly Agree: Always Available; 4 (3.40–4.19) – Agree: Usually Available; 3 (2.60–3.39) – Neutral: Occasionally Available; 2 (1.80–2.59) – Disagree: Rarely Available; 1 (1.00–1.79) – Strongly Disagree: Never Available

The findings reflect a partial implementation of educational technology in public elementary schools. Teachers may have access to personal or shared devices and digital tools for lesson delivery. However, the absence of individual devices for students and up-to-date interactive tools limits their capacity to deliver fully tech-integrated, student-centered instruction. This uneven distribution of resources suggests that while schools may be investing in infrastructure, they may not yet be able to provide the classroom-level technology necessary to meet the demands of modern pedagogy. The variability in scores, as indicated by relatively high standard deviations (e.g., SD = 1.22 for digital display tools), also points to inconsistencies across schools or classrooms.

In line with this finding, the study shows that using SMART boards created diverse learning experiences that boosted student engagement and interaction, leading to higher motivation and improved academic performance. SMART technology has the potential to revolutionize education, helping to provide high-quality education that meets global standards (Tsayang et al., 2020).

The findings are particularly relevant to teachers, as they reveal challenges in integrating technology into instruction due to limited access to student devices and interactive tools. This restricts their ability to use digital platforms and multimedia resources that enhance learning. For school leaders and education decision-makers, the results identify specific technological gaps that must be addressed to support digital learning initiatives, improve teaching effectiveness, and prepare students for technology-driven environments.

Table 6 summarizes public elementary school teachers' degree of availability of classroom resources, categorized into physical and technological. The table reports the mean scores, standard deviations (SD), descriptive ratings, and qualitative interpretations for both categories and the overall resources.

Table 6. Summary of public elementary school teachers' degree of availability of classroom resources

Classroom resources	Mean	SD	Qualitative Interpretation
Physical Resources	3.91	0.62	Usually available
Technological Resources	3.45	0.83	Usually available
Overall	3.68	0.65	Usually available

Legend: 5 (4.20–5.00) – Strongly Agree: Always Available; 4 (3.40–4.19) – Agree: Usually Available; 3 (2.60–3.39) – Neutral: Occasionally Available; 2 (1.80–2.59) – Disagree: Rarely Available; 1 (1.00–1.79) – Strongly Disagree: Never Available

As summarized in Table 6, the overall mean score for the availability of classroom resources among public elementary school teachers was 3.68 (SD = 0.65), interpreted as "usually available." When broken down by category, physical resources received a higher mean score of 3.91 (SD = 0.62), while technological resources were rated lower, with a mean of 3.45 (SD = 0.83). Both fall within the "usually available" range but indicate a slight disparity in access across resource types.

The results show that while physical resources are consistently available to support teaching, access to technological tools is more limited. Teachers may have adequate classroom space, furniture, and basic supplies, but face challenges in integrating digital tools into their teaching due to insufficient access to modern technologies and student devices. This discrepancy may hinder their ability to implement innovative and technology-supported teaching practices fully.

This pattern suggests that although schools have achieved a certain level of readiness in providing essential physical infrastructure, efforts to modernize classrooms through technology integration are not yet fully realized. The unequal availability between physical and technological resources reflects ongoing limitations in educational investment or distribution, which can restrict teachers' ability to enhance instruction, particularly when curriculum demands digital literacy and 21st-century skills.

In contrast to the study's positive results, Magallanes et al. (2022) noted that educational institutions should place greater emphasis on reforming innovation, as the results and resources provided to teachers are inadequate. Teachers initially pointed out that the proposed curriculum is challenging to implement due to a lack of resources, limited skills, and time constraints. In the context of the Philippines, collaboration requires more effort and focus, as teachers often face constraints in terms of resources and time.

This overall view of classroom resource availability is essential for teachers as it directly affects how they plan and deliver instruction. While physical resources are generally sufficient, the lower availability of technological tools may hinder the full implementation of innovative practices. For school officials, education departments, and policymakers, the results signal a need for balanced resource provision, ensuring that technological resources catch up with physical ones to create an environment that fully supports 21st-century teaching and learning.

The innovative capacity of public elementary school teachers plays a significant role in influencing the educational experience and promoting student engagement. Below, we explore the level of teacher innovative capacity in these key areas, including their attitude towards innovation, skills and knowledge for innovation, and ability to implement innovative methods.

Table 7 presents a summary of the level of innovative capacity among public elementary school teachers, as reflected in their attitudes toward innovation. The table includes five indicators that assess teachers' perspectives on adopting innovative teaching methods and technologies.

Table 7. A public elementary school teacher's level of innovative capacity in terms of attitude towards innovation

Indicator	Mean	SD	Qualitative Interpretation
1. I feel that innovation in teaching is important for fostering 21st-century skills in students.	4.61	0.62	Very highly competent
2. I believe that using innovative teaching methods can improve student engagement and learning outcomes.	4.60	0.54	Very highly competent
3. I believe that my students benefit from innovative teaching methods that promote critical thinking and problem-solving.	4.53	0.63	Very highly competent
4. I am open to trying new and unconventional teaching strategies in my classroom.	4.52	0.60	Very highly competent
5. I am willing to experiment with new teaching technologies, even if I am not familiar with them.	4.45	0.68	Very highly competent
Overall	4.54	0.52	Very highly competent

Legend: 5 (4.20–5.00) – Strongly Agree: Very Highly Competent; 4 (3.40–4.19) – Agree: Highly Competent; 3 (2.60–3.39) – Neutral: Moderately Competent; 2 (1.80–2.59) – Disagree: Slightly Competent; 1 (1.00–1.79) – Strongly Disagree: Not Competent.

In light of the data, Table 8 shows that the overall mean score for public elementary school teachers' innovative capacity in terms of attitude toward innovation is 4.54 (SD = 0.52), interpreted as "very highly competent." All five indicators received high ratings, with mean scores ranging from 4.45 to 4.61. The highest-rated item was the belief in the importance of innovation for developing 21st-century skills in students ($M = 4.61$), closely followed by the perceived benefits of innovation on engagement and learning outcomes ($M = 4.60$).

The data reflect the respondents' consistently strong and positive attitude toward innovation. Teachers clearly recognize the value of innovation in enhancing student learning, especially in terms of engagement, problem-solving, and critical thinking. High ratings on openness to new teaching strategies and willingness to experiment with technology suggest that the respondents are receptive to change and motivated to apply it in their practice.

This strong inclination toward innovation suggests a readiness among public elementary school teachers to adopt and implement innovative practices, provided the necessary support and resources are in place. Their belief in the benefits of innovation aligns with educational goals aimed at fostering 21st-century competencies. These attitudes are crucial for driving pedagogical change and adapting to evolving classroom needs. The results also imply that attitudinal barriers are not a major constraint in this context, which shifts the responsibility to systemic support, such as training and resource provision.

The very high level of competence in teachers' attitudes toward innovation is consistent with Chikwaka et al. (2024), who asserted that learner-centered and technology-based pedagogy equips students with real-world skills and sustains engagement in the classroom. This underscores that teachers' positive beliefs about innovation are rooted in a broader understanding of its importance in preparing learners for the demands of the 21st century. Similarly, Ascione (2023) emphasized that digital tools enable more interactive and impactful instruction, thereby strengthening teachers' confidence in innovation as a pathway to improved learning outcomes.

The results are highly relevant to the teachers themselves, as their strong attitudes toward innovation indicate a professional mindset geared toward continuous improvement and responsiveness to modern educational demands.

For school leaders and policymakers, this signals that teachers are already mentally and professionally prepared for innovation. They need adequate resources, training, and institutional support to turn these positive attitudes into sustained classroom practices that benefit student learning outcomes.

Table 8 provides a summary of public elementary school teachers' level of innovative capacity in terms of their skills and knowledge for innovation. The table includes five indicators that assess teachers' abilities and willingness to engage in innovative teaching practices.

Table 8. *A public elementary school teacher's level of innovative capacity in terms of skills and knowledge for innovation*

Indicator	Mean	SD	Qualitative Interpretation
1. I actively seek professional development opportunities to enhance my innovative teaching skills.	4.35	0.74	Very highly competent
2. I continuously seek out new resources, materials, and techniques to improve my teaching.	4.34	0.67	Very highly competent
3. I have the confidence to implement innovative teaching strategies in my classroom.	4.22	0.79	Very highly competent
4. I possess the necessary skills to integrate new technologies and teaching tools into my lessons.	4.14	0.79	Highly competent
5. I am knowledgeable about various teaching strategies (e.g., project-based learning, flipped classroom, and gamification) and can effectively implement them in my teaching.	4.11	0.73	Highly competent
Overall	4.23	0.63	Very highly competent

Legend: 5 (4.20–5.00) – Strongly Agree: Very Highly Competent; 4 (3.40–4.19) – Agree: Highly Competent; 3 (2.60–3.39) – Neutral: Moderately Competent; 2 (1.80–2.59) – Disagree: Slightly Competent; 1 (1.00–1.79) – Strongly Disagree: Not Competent.

Table 8 reveals that the overall mean score for teachers' innovative capacity in terms of skills and knowledge is 4.23 (SD = 0.63), which is interpreted as "very highly competent." The highest-rated indicator sought professional development to enhance innovative teaching skills (M = 4.35), followed closely by the active pursuit of new materials and techniques (M = 4.34). Meanwhile, the lowest-rated items were knowledge of teaching strategies (M = 4.11) and integration of new technologies (M = 4.14), though both still fell under "highly competent."

These findings suggest that teachers are proactive and self-motivated in acquiring skills and knowledge that support innovation in the classroom. The high professional development and continuous learning scores reflect a strong commitment to professional growth. However, slightly lower ratings in technology integration and strategy implementation indicate that while teachers are willing and confident, they may need more structured support or training to consistently deepen their mastery in applying specific innovations.

The data point to a strong foundational capacity among teachers to support innovation through skill development and knowledge acquisition. Their self-initiated efforts in learning new methods and resources are encouraging signs of professional responsibility and openness to growth. However, the relatively lower—but still high—ratings in areas like technology integration suggest that practical challenges such as access to tools or formal training may hinder optimal implementation. This indicates a need to strengthen ongoing capacity-building efforts at the school or district level.

The findings on teachers' high competence in innovation-related skills and knowledge are reinforced by Bušljeta (2013), who highlighted that teaching effectiveness in today's educational landscape relies heavily on varied and modern resources. Teachers' active pursuit of professional development aligns with

Mcauley (2023) emphasized that when educators are equipped with appropriate tools and training, they can better nurture their students' curiosity, creativity, and learning. Furthermore, Pagniano (2022) noted that providing meaningful resources and support for educators builds competence and enhances their overall effectiveness in the classroom.

These results are of great importance to public elementary school teachers, who affirm their active role in driving instructional innovation through skill-building and continuous learning. However, for school leaders and educational authorities, the findings underline the importance of complementing teacher efforts with access to high-quality training, up-to-date resources, and practical opportunities for applying new strategies. Supporting teachers in these areas will help ensure their skills and knowledge translate into impactful and sustainable classroom innovation.

Table 9 provides a summary of public elementary school teachers' level of innovative capacity in terms of the implementation of innovative methods. The table outlines five indicators that assess teachers' use of innovative teaching strategies in their classrooms.

As shown in Table 9, the overall mean score for the implementation of innovative methods by public elementary school teachers is 4.18 (SD = 0.56), interpreted as "highly competent." The highest-rated indicator was the regular use of student-centered teaching approaches that promote collaboration, creativity, and critical thinking (M = 4.32).

Other indicators, such as providing real-world learning experiences (M = 4.18), promoting student choice (M = 4.18), integrating technology (M = 4.14), and redesigning lesson plans with innovative ideas (M = 4.09), also received high ratings within the same category.

Table 9. *A public elementary school teacher's level of innovative capacity in terms of the implementation of innovative methods*

Indicator	Mean	SD	Qualitative Interpretation
1. I regularly use student-centered teaching approaches that focus on collaboration, creativity, and critical thinking.	4.32	0.62	Very highly competent
2. I provide students with opportunities to explore and apply their knowledge in real-world contexts through project-based learning or inquiry-based activities.	4.18	0.61	Highly competent
3. I encourage students to take ownership of their learning by allowing them to choose or design aspects of their projects or assignments.	4.18	0.71	Highly competent
4. I incorporate technology (e.g., educational apps, online platforms, multimedia) into my lessons to make learning more interactive and engaging.	4.14	0.72	Highly competent
5. I often redesign my lesson plans to incorporate new and innovative ideas that meet the diverse needs of my students.	4.09	0.67	Highly competent
Overall	4.18	0.56	Highly competent

Legend: 5 (4.20–5.00) – Strongly Agree: Very Highly Competent; 4 (3.40–4.19) – Agree: Highly Competent; 3 (2.60–3.39) – Neutral: Moderately Competent; 2 (1.80–2.59) – Disagree: Slightly Competent; 1 (1.00–1.79) – Strongly Disagree: Not Competent.

The results suggest that teachers frequently apply innovative instructional practices, particularly those that place students at the center of the learning process. They actively incorporate methods that foster 21st-century skills and design more interesting and instructive educational opportunities. While the mean score nearly reaches the "very highly competent" range, it also indicates that some aspects of implementation, such as consistent lesson redesign or advanced tech integration, may be limited by other factors, including time constraints, access to resources, or institutional support.

These findings reflect a strong commitment among teachers to adopt modern teaching practices, despite possible limitations in their environment. The high frequency of student-centered strategies and project-based learning shows that innovation is understood in theory and applied in practice. However, the slightly lower ratings in areas like lesson redesign and technology use suggest that sustaining innovation may require more systemic support, such as collaborative planning time, access to digital tools, and professional development focused on advanced instructional design.

Despite strong attitudes and knowledge, the slightly lower score in implementing innovative methods can be better understood through Fisher and Frey (2022), who observed that the classroom environment is critical in enabling or constraining innovation. Classrooms that lack psychological safety or are overcrowded with visual distractions may hinder the application of innovative strategies. Additionally, Nwuke and Kelechi (2024) emphasized that the success of innovation implementation is closely tied to the availability and management of physical resources, suggesting that infrastructural limitations may influence how effectively teachers can carry out new teaching approaches.

The findings are directly meaningful to public elementary school teachers, as they affirm their active role in implementing innovative methods that support deeper learning. At the same time, the results provide school administrators, curriculum developers, and policymakers with evidence that teachers are already applying innovative practices but may need enhanced support to sustain and expand these efforts. By addressing practical barriers and reinforcing innovation-focused training and infrastructure, educational leaders can help ensure these classroom innovations become routine and more impactful.

Table 10 summarizes public elementary school teachers' overall level of innovative capacity. It outlines three key aspects: attitude towards innovation, skills and knowledge for innovation, and implementation of innovative methods.

Table 10. *Summary of public elementary school teachers' level of innovative capacity*

Innovative Capacity	Mean	SD	Qualitative Interpretation
Attitude towards innovation	4.54	0.52	Very highly competent
Skills and knowledge for innovation	4.23	0.63	Very highly competent
Implementation of innovative methods	4.18	0.56	Highly competent
Overall	3.68	0.65	Very highly competent

Legend: 5 (4.20–5.00) – Strongly Agree: Very Highly Competent; 4 (3.40–4.19) – Agree: Highly Competent; 3 (2.60–3.39) – Neutral: Moderately Competent; 2 (1.80–2.59) – Disagree: Slightly Competent; 1 (1.00–1.79) – Strongly Disagree: Not Competent.

Table 10 presents the summary of public elementary school teachers' level of innovative capacity across three dimensions: attitude, skills and knowledge, and implementation. The overall mean score was 4.32 (SD = 0.50), interpreted as "very highly competent." The highest-rated component was attitude toward innovation (M = 4.54), followed by skills and knowledge for innovation (M = 4.23), both within the "very highly competent" range. The dimension with the lowest rating was implementation of innovative methods (M = 4.18), which was still rated as "highly competent."

The data suggest that teachers possess a strong orientation toward innovation, with particularly high levels of belief in and openness to adopting innovative teaching practices. They also demonstrate confidence and initiative in acquiring the skills and knowledge needed to innovate. However, the slightly lower score in implementation implies that putting innovation into consistent classroom practice may be more challenging than simply valuing or understanding it. This gap between belief and action may reflect external limitations such as time, resources, or institutional constraints.

While teachers show strong potential and readiness to innovate, the results point to a familiar challenge in education: turning theory into sustained practice. The high scores in attitude and skills indicate that teachers are motivated and professionally capable of innovating. Though still high, the slightly lower rating in implementation suggests that systemic barriers—such as lack of support, limited access to technology, or rigid curricula—may inhibit complete execution of innovative approaches. Addressing this disparity is essential for translating capacity into classroom transformation.

Compared to other domains, the slightly lower mean in the implementation of innovative methods suggests existing obstacles in translating attitudes and knowledge into classroom practice. This aligns with Fisher and Frey (2022), who noted that disorganized or overstimulating physical environments can hinder innovation. Nwuke and Kelechi (2024) further emphasized that physical resources and infrastructure have a direct impact on pedagogical innovation. Moreover, Grace and Nueva (2019) found that although technology supports teaching, teachers often face digital inequality, stemming from disparities in digital skills and differing institutional beliefs about educational technology. These limitations underscore the importance of providing resources, training, and institutional alignment to support innovation. These findings are highly relevant to public elementary school teachers, as they confirm their readiness and willingness to innovate, which is essential for modern, learner-centered education. The results highlight school leaders, training providers, and policymakers' need to support teachers in the implementation phase through practical tools, flexible structures, and professional development opportunities that help bridge the gap between competence and consistent application. Prioritizing implementation support ensures that innovation in education does not remain an ideal but becomes an everyday reality in classrooms.

Table 11 shows the results of a correlation analysis between classroom resources and the innovative capacity of public elementary school teachers. It includes each indicator's computed correlation coefficients and p-values, with remarks indicating its significance.

Table 11. *Correlation Analysis between the degree of availability of classroom resources and the innovative capacity of public elementary school teachers*

Indicator	r – value	p-value	Remarks
Classroom resources	0.483	0.000	Significant
Physical resources	0.436	0.000	Significant
Technological resources	0.430	0.000	Significant

Correlation is significant at the 0.01 level (2-tailed)

Table 11 shows a moderate positive correlation between the overall availability of classroom resources and the innovative capacity of public elementary school teachers, with a correlation coefficient of $r = 0.483$ and a pvalue of 0.000, indicating statistical significance at the 0.01 level. When broken down, both physical resources ($r = 0.436$) and technological resources ($r = 0.430$) also showed significant positive correlations with innovative capacity.

These results suggest that as the availability of classroom resources increases, so does teachers' innovative capacity. The strength of the correlation—moderate and statistically significant—indicates a meaningful relationship between the two variables. The similar correlation values for physical and technological resources imply that each resource type contributes comparably to supporting innovation, though neither in isolation guarantees it.

The findings confirm that access to adequate classroom resources enables teachers to innovate. While the correlation is imperfect, it is strong enough to suggest that resource availability plays a key role in enabling innovative behavior. Teachers with sufficient materials, tools, and infrastructure are better positioned to apply creative and modern instructional strategies. On the other hand, limited resources can hinder even the most willing and skilled teachers from putting innovation into practice.

The significant correlation between classroom resources and innovative capacity validates the view that access to physical and technological tools directly supports innovative teaching. This is supported by McAuley (2023) and Bušljeta (2013), who emphasized that a well-equipped classroom empowers educators to apply diverse and engaging strategies.

Furthermore, Elbanna (2022) observed that technology has reshaped education, providing teachers with tools that broaden access to learning materials, support critical skill development, and promote more enjoyable and effective learning environments. These findings showcase the critical role of the availability of classroom resources in cultivating innovation among teachers.

These results are directly relevant to public elementary school teachers, as they underscore how critical resource support is to their ability to innovate. For school heads, district supervisors, and policymakers, the findings present clear evidence that investing in both physical and technological classroom resources is not just about improving infrastructure—it is about empowering teachers to deliver high-impact, student-centered instruction. Strengthening resource availability can lead to meaningful gains in teaching innovation, ultimately benefiting student learning and achievement.

Table 12 provides the results of a regression analysis, highlighting the variables that predict the innovative capacity of public elementary school teachers.

Table 12 displays the results of a multiple linear regression analysis conducted to find whether the availability of physical and technological resources significantly predicts the innovative capacity of public elementary school teachers. The model is statistically significant ($F = 18.696$, $p = 0.000$) and yields an R-value of 0.484 and an R^2 of 0.235, indicating that the two predictor variables can



explain 23.5% of the variance in teachers' innovative capacity. Both physical resources ($\beta = 0.279$, $p = 0.006$) and technological resources ($\beta = 0.263$, $p = 0.009$) contributed significantly to the prediction of innovative capacity.

Table 12. Variables that predict the innovative capacity of public elementary school teachers

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.904	0.251	–	11.576	0.000
Physical resources	0.222	0.079	0.279	2.825	0.006
Technological resources	0.158	0.059	0.263	2.668	0.009
R = 0.484	R Square = 0.235		F = 18.696	Sig. = 0.000	

The regression model is significant at the 0.01 level (2-tailed)

The regression equation shows that both physical and technological resources have a positive predictive effect on teachers' innovative capacity. The constant term (2.904) represents the baseline level of innovative capacity when both predictors are at zero. A unit increase in the availability of physical resources is associated with a 0.222-point increase in innovative capacity, while a unit increase in technological resources predicts a 0.158-point increase. These values indicate that although both types of resources are important, physical resources exert a slightly stronger influence in this model.

The model confirms that a teacher's capacity for innovation is not only a matter of personal attributes or attitudes but is also significantly shaped by their working environment, particularly by their available resources. The predictive strength of the model, while moderate, provides evidence that improvements in classroom resource availability can lead to measurable enhancements in teaching innovation. This underscores the need for capacity-building in education to involve both professional development and environmental support.

The findings confirm that physical and technological resources are meaningful predictors of teachers' innovative capacity. This aligns with Nwuke & Kelechi (2024), who noted that improved access to instructional tools supports enhanced learning outcomes. Chikwaka et al. (2024) added that technology integration prepares learners for future challenges and strengthens pedagogical innovation. Additionally, Enlighten Supply Pool (2024) emphasized that the strategic use of resources, combined with collaboration and ongoing professional development, maximizes their impact in the classroom. These insights underscore that equipping teachers with adequate tools must be accompanied by opportunities for skill development and professional growth.

These results validate the role of adequate classroom resourcing in supporting public elementary school teachers' ability to innovate. They highlight that their potential to deliver dynamic, student-centered instruction is strengthened when they are provided with the necessary tools and infrastructure. For educational leaders and policymakers, the regression model provides a concrete basis for prioritizing resource allocation. Targeted investment in physical and technological resources can be a strategic approach to fostering innovation and instructional quality in public schools.

Conclusions

The subsequent conclusions were derived from the study's findings:

The public elementary school teachers represented a diverse teaching population in terms of experience, grade level, and educational attainment. The majority had more than six years of teaching experience, indicating a relatively experienced workforce. Teachers were distributed across all elementary grade levels, with the highest number teaching Grade 3. Most respondents held a bachelor's degree, with a significant number pursuing or holding a Master's degree, and a few holding doctoral degrees. This suggests a qualified teaching force with ongoing professional advancement in the district.

Public elementary school teachers generally reported that classroom resources were usually available, with physical resources being more accessible than technological resources. While basic needs such as furniture, instructional materials, and space were commonly present, some schools had limited access to modern devices, reliable internet, and digital tools.

Teachers demonstrated a very high level of innovative capacity, particularly in their attitude towards innovation, showing a strong belief in the value of innovative teaching. They were also competent in skills and knowledge for innovation and the implementation of innovative methods, though slightly lower in actual classroom application, suggesting a gap between intent and practice. There is a significant and positive relationship between the availability of classroom resources and the innovative capacity of teachers. This implies that greater access to physical and technological resources is associated with higher levels of teacher innovation.

Both physical and technological resources were found to be significant predictors of teachers' innovative capacity. Although the model explained a modest proportion of the variance, it highlights the practical influence of resource availability in fostering innovation in teaching.

Overall, the study concludes that enhancing resource availability is essential to support teachers in adopting and sustaining innovative practices, which are critical for improving student engagement and learning outcomes in the 21st-century classroom.

From the findings and conclusions of the study, the researcher shares a set of recommendations intended to tackle the identified issues

and improve outcomes moving forward.

To educational planners and policymakers: Consider aligning innovation goals with equitable resource allocation and long-term teacher development. Since physical and technological resources significantly influence innovative capacity, policymakers should prioritize providing schools with modern and sufficient tools to support 21st-century teaching. Special attention should be given to underresourced schools to promote equal opportunities for innovation. Additionally, integrating innovation-focused objectives into teacher training frameworks can ensure that resource availability matches the necessary competencies for practical use.

To school heads and district supervisors: Support teacher innovation by improving access to instructional resources and tailoring professional development. The presence of a highly experienced teaching force is an asset that can be further harnessed through capacity-building programs that focus on integrating innovation into daily practice. Leadership is encouraged to ensure that physical materials and digital tools are regularly updated and accessible. They may also consider initiating mentoring systems where experienced educators guide others in innovative teaching approaches, particularly in grade levels with strong representation.

To teachers: Engage in continuous professional growth and maximize available resources for innovation. Teachers are encouraged to seek opportunities to improve their competence in creatively using physical and technological tools. Participation in learning communities, training workshops, and collaborative innovation projects can help bridge the gap between intention and implementation. Teachers may also advocate for their resource needs and contribute to decision-making processes related to classroom innovation.

To curriculum developers and instructional resource designers: Tailor materials and platforms to the corresponding needs of public elementary school teachers. Considering that the implementation of innovative methods scored slightly lower than attitude and knowledge, teaching tools that are practical, relevant, and aligned with the local classroom context are needed. Customizable, user-friendly digital content and printed resources can support more effective and inclusive instruction.

To future researchers: Explore other factors that influence teachers' innovation capacity and extend the study to broader contexts. Further studies could examine school leadership style, institutional support, or student demographics. It may also be valuable to include qualitative approaches to capture teachers' lived experiences regarding resource availability and innovation. Expanding the geographical scope could strengthen the generalizability of findings and support policy formulation at a wider level.

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