

Teachers' Competency, Engagement, And Productivity in Conducting Classroom-Based Research

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Abstract

This study explores teachers' competency, engagement, and productivity in classroom-based research, focusing on trends, challenges, and solutions to enhance their effectiveness and impact. Using a Quantitative Descriptive Research design, the study analyzes the profiles of 301 elementary teachers in the Nagcarlan Sub-office, utilizing total enumeration sampling. Demographic variables such as age, gender, teaching experience, and education level are considered to assess areas requiring development in research-related practices. The findings indicate that teachers generally exhibit moderate competency in areas such as analytics, collaboration, and professional application of research. Gender influences their understanding of research concepts, while age and teaching experience significantly affect skills related to professional development. Younger and mid-career teachers show adaptability to technology, fueling their engagement in research, whereas veteran teachers offer valuable expertise for collaboration. Challenges like limited analytical capabilities, lack of institutional support, and inadequate access to resources hinder the ability of many teachers to conduct quality research and apply findings effectively to classroom teaching. Variations in engagement are observed across dimensions such as willingness, frequency, collaboration, and motivation. While gender influences willingness and frequency, age and experience drive motivation and the ability to apply research findings. Education level shows minimal correlation to engagement, revealing that external and intrinsic factors play a greater role. Teachers face difficulties in converting theoretical research into actionable classroom practices, necessitating collaboration and peer mentorship to bridge these gaps. In terms of productivity, intrinsic motivation emerges as a key driver, enabling teachers to produce research results that improve teaching outcomes. Veteran teachers display increased capacity to translate research into classroom applications, significantly enhancing productivity. Institutional support, such as providing resources and encouragement, also plays a critical role. The study recommends addressing competency gaps through targeted professional development and mentorship programs. Collaborative initiatives, such as team-based research projects and peer networks, can increase teachers' engagement and ability to implement research findings. By fostering intrinsic motivation and offering administrative guidance, schools can empower teachers to connect research with practical teaching strategies, ultimately improving classroom outcomes for students.

Keywords: Classroom Productivity, Teacher's Competency, Engagement.

1. Introduction

Globally, in the increasingly complex and evolving landscape of education, the role of teachers extends beyond traditional instruction to include research-driven practices that enhance student learning. To ensure continuous improvement in teaching methodologies, educators are expected to engage in classroom-based research that informs instructional decisions and fosters educational innovation. Among various research approaches, action research has emerged as a pivotal tool for teachers, enabling them to systematically examine their teaching strategies, identify challenges, implement targeted interventions, and assess outcomes to refine their practice.

Action research holds significant potential to transform classroom instruction by integrating research within teachers' daily experiences. This reflective inquiry empowers educators to address real-time challenges, enhance pedagogical effectiveness, and improve student outcomes. However, despite its numerous benefits, many teachers demonstrate hesitancy in conducting classroom-based research due to a variety of factors, including workload pressures, time constraints, and limited research competency. Understanding these barriers is essential in developing strategies that enhance teachers' engagement and productivity in research.

The Philippine Department of Education (DepEd) highlights teacher-led research as a crucial driver for improving education at the policy level. This is outlined in DepEd Order No. 16, 2017, which provides clear guidelines on managing research. Additionally, DepEd Order No. 39, s... further supports this approach. In 2022, there was a strong emphasis on the value of action research as a way for teachers to apply evidence-based methods in the classroom, promoting continuous professional development and growth. Despite these policy efforts, a gap persists between policy implementation and actual teacher participation in research activities. Teachers continue to face challenges in engaging with classroom-based studies, underscoring the need for an in-depth investigation into the factors influencing their competency, engagement, and productivity in research.

Action research is widely recognized as a mechanism for professional growth, allowing teachers to critically assess their instructional strategies, experiment with new techniques, and evaluate their effectiveness in real classroom settings. It aligns with the principles of reflective practice, wherein educators engage in self-directed learning and continuous improvement. However, despite its theoretical advantages, the reality of action research implementation remains inconsistent. Studies indicate low participation rates among teachers in action research initiatives, highlighting the gap between its perceived value and actual practice.

In Nagcarlan Sub-Office, for instance, teachers face significant barriers in conducting classroom-based research. Commonly cited challenges include overwhelming workloads, insufficient time for research

activities, and inadequate training in research methodologies. Additionally, many educators struggle to see the direct relevance of action research to their immediate teaching responsibilities, leading to diminished motivation and engagement. This disconnect contributes to the perception that research is an additional burden rather than a valuable component of professional development.

Although DepEd has introduced various initiatives, such as DepEd Order No. 43, s. 2015, which provides guidelines for school-based management, the effectiveness of these policies in fostering research engagement remains a concern. While substantial literature exists on the benefits of action research and its role in teacher development, limited studies have specifically examined the reasons behind teachers' reluctance to conduct research, particularly within the Philippine education system.

This study aims to close that gap by exploring what factors affect teachers' skills, motivation, and effectiveness when they carry out research in their classrooms. By investigating the specific challenges and perceptions of teachers regarding research, this study will provide valuable insights into the practical barriers that hinder their participation. It will also serve as the foundation for developing a training program designed to equip teachers with the knowledge, support, and tools they need to engage in research-based teaching practices confidently. Through this initiative, the study aspires to strengthen the research culture among educators, ultimately enhancing teaching effectiveness and student learning outcomes.

Theoretical Framework

This study was anchored on the Expectancy-Value Theory (EVT), which explains that an individual's motivation to perform a task is shaped by their belief in their ability to succeed (expectancy) and the importance they attach to the task (value). Serving as the guiding lens, EVT provided a coherent framework for examining teachers' competency, engagement, and productivity in conducting classroom-based research. In terms of competency, the theory helped assess teachers' understanding of research concepts, their application of research in classroom instruction, their view of research as a means for professional growth, and its perceived impact on students, while also revealing how barriers such as time constraints or lack of resources can diminish expectancy and overall competence. For engagement, EVT clarified how willingness, research frequency, collaboration, integration of findings into teaching, and sustained motivation are influenced by both confidence in ability and the perceived relevance of research to teaching practice. Regarding productivity, the theory offered insight into how expectancy and value shape the production of quality research outputs, participation in presentations or publications, improvements in teaching methods, positive student outcomes, and the effect of administrative support on research activity. By consistently applying EVT across all variables, this study was able to identify not only the current levels of

teachers' performance in classroom-based research but also the motivational factors driving or hindering their involvement, thereby guiding the formulation of targeted recommendations to enhance research culture in schools.

Statement of the Problem

This study aims to analyze the teachers' competency, engagement, and productivity in conducting classroom-based research in the Nagcarlan sub-office.

Specifically, it sought to find answers to the following:

1. What is the demographic profile of respondents in terms of:
 - 1.1 Age;
 - 1.2 Sex;
 - 1.3 Educational Attainment; and
 - 1.4 Years of Teaching?
2. What is the level of the teacher's competency in conducting classroom-based research in terms of:
 - 2.1 research concepts;
 - 2.2 Classroom Application;
 - 2.3 professional growth;
 - 2.4 student impact; and
 - 2.5 Research Barriers?
3. What is the extent to which teachers actively engage in classroom-based research in terms of:
 - 3.1 willingness;
 - 3.2 research frequency;
 - 3.3 collaboration;
 - 3.4 research integration; and
 - 3.5 research motivation?
4. What is the level of teachers' productivity in conducting classroom-based research in terms of:
 - 4.1 research output;
 - 4.2 presentation/publication;
 - 4.3 teaching improvements;
 - 4.4 student outcomes; and
 - 4.5 administrative support?
5. Is there a significant difference in the teacher's level of competency in conducting classroom-based research when grouped according to profile?

6. Is there a significant difference in the extent to which teachers actively engage in classroom-based research when grouped according to their profile?
7. Is there a significant difference in the level of teachers' productivity in conducting classroom-based research when grouped according to profile?
8. Is there a significant relationship between teachers' competency in conducting classroom-based research and their productivity in conducting classroom-based research?
9. Is there a significant relationship between teachers' competency in conducting classroom-based research and their level of engagement in such research?
10. Is there a significant relationship between teachers' level of engagement in such research and their productivity in conducting classroom-based research?
11. Based on the results of the study, what retooling training program may be proposed?

Research Methodology

The present study employed Quantitative Descriptive Research, which was particularly aligned with teachers' competency, engagement, and productivity in conducting classroom-based research. This method focused on characterizing the nature and status of individuals, phenomena, and contexts, making it well-suited for obtaining statistical insights about the population of interest. By expressing information in numerical terms, quantitative descriptive research provided a clear and systematic approach to examining teachers' attitudes, beliefs, and challenges related to action research.

Data was collected using a structured survey shared with the chosen group of participants, which helped gather strong and reliable quantitative information. The descriptive survey research process extended beyond mere data collection and tabulation; it encompassed the interpretation of results to derive meaningful insights. This approach was particularly advantageous for exploring teachers' competency, engagement, and productivity in research, as it aimed to quantify their experiences and attitudes, ultimately revealing trends and patterns that could inform the broader educational system.

While the quantitative method offered valuable insights, the study acknowledged the inherent limitations associated with this approach, particularly regarding the nuances of teachers' competency, engagement, and productivity in research. The statistical findings were critically evaluated to ensure a comprehensive interpretation that considered the complexities underlying the data. By recognizing these uncertainties, the research was able to offer more meaningful conclusions and recommendations, thereby enhancing the overall quality and relevance of the findings in the field of action research.

This study employed a total enumeration sampling technique to assess teachers' competency, engagement, and productivity in conducting classroom-based research within the Nagcarlan Sub-Office. Total

enumeration sampling was an effective method for ensuring comprehensive representation of various subgroups within the population, allowing for a thorough analysis of teachers' attitudes and experiences across diverse demographic factors.

The sample included all 301 elementary teachers within the Nagcarlan Sub-Office, selected from the total population of elementary educators. This sampling method categorized the teacher population into distinct strata based on relevant characteristics such as grade level, subject area, and years of experience. By ensuring proportional representation of each subgroup, this approach provided an accurate reflection of the broader teaching community. The study captured a range of perspectives to identify the factors influencing teachers' competency and engagement with classroom-based research.

The data analysis involved calculating the mean scores and corresponding standard deviations of teachers' responses regarding action research. This quantitative analysis provided valuable insights into the overall performance and variability of teachers' perceptions, revealing trends and discrepancies in their attitudes and experiences. By utilizing total enumeration sampling, the study ensured a sufficiently large and representative sample while also maintaining manageable data for analysis. The results served as a basis for informing pedagogical practices, enhancing curriculum development, and supporting the effective implementation of research initiatives within the Nagcarlan Sub-Office.

Respondents of the Study

This study involved 301 elementary teachers who were actively teaching in the Nagcarlan Sub-Office. This group was intentionally selected as the entire population of elementary teachers within the sub-office, making it a representative sample of the broader teaching community in the district. The selection of 301 respondents was based on considerations of resource availability, data collection feasibility, and the balance between sample size and statistical significance. This sample size was deemed sufficient for generating meaningful conclusions and identifying patterns in the data, while also ensuring that the sample remained manageable for thorough analysis. By including all teachers in the sub-office, the study was able to gather diverse perspectives that reflected the broader educational practices and professional experiences of the district's teachers, thereby enriching the findings and contributing to the development of effective professional development initiatives.

In this study, the primary tool for gathering data was a survey questionnaire created by the researcher. It was carefully developed based on the researcher's review of related studies, professional literature, and relevant readings on the topic. Before being used, the questionnaire was validated to ensure its effectiveness in collecting accurate and meaningful information from the respondents.

The questionnaire was divided into four sections. Part I gathered information about the respondents'

demographic details, including their age, gender, educational background, and years of teaching experience. Part II assessed the teachers' competency in conducting classroom-based research, focusing on areas such as understanding research concepts, applying them in the classroom, professional development, the impact on students, and any challenges they faced during the research process. Part III measured the extent to which teachers actively engaged in classroom-based research in terms of willingness, research frequency, collaboration, research integration, and research motivation. Part IV measured the level of teachers' productivity in conducting classroom-based research in terms of research output, presentation or publication, teaching improvements, student outcomes, and administrative support.

Respondents were asked to select their answers by checking the option that best matched their response. A four-point rating scale was used throughout each section of the questionnaire.

Results and Discussion

1. What is the demographic profile of the respondents according to age, sex, highest educational attainment, and years in teaching in conducting classroom-based research in the Nagcarlan sub-office?

The study aims to explore the demographic profile of participants involved in classroom-based research at the Nagcarlan sub-office, focusing on their age, gender, highest level of education, and years of teaching experience. Understanding these demographic characteristics is essential to provide insights into potential trends, gaps, and correlations that may influence their research practices and outcomes. Specifically, this investigation seeks to identify the age distribution of respondents, the gender composition, their academic qualifications, and their teaching experience. The results of this study are expected to provide valuable insights for stakeholders and policymakers to enhance professional development programs, promote equal research opportunities, and strengthen educators' ability to conduct research. Ultimately, this demographic analysis will lay the foundation for future efforts to improve the quality and effectiveness of classroom-based research in the area.

Table 1.

Age Profile of the Respondents

Age Profile	F	%
20 – 25 years old	65	21.6
26 – 30 years old	89	29.6
31 – 35 years old	78	25.9
36 years old and above	69	22.9
Total	301	100

Legend: f = frequency; and % = percentage

The respondents' age profile is displayed in Table 1 and reveals a wide range across different age groups. The most significant proportion of respondents falls within the 26–30 years old bracket, comprising 29.6% (n=89) of the total, indicating that a substantial number are in the early stages of their professional careers, potentially reflecting a strong presence of relatively young but experienced individuals in the study population. This is followed closely by respondents aged 31–35 years old, who account for 25.9% (n=78), suggesting a considerable group of mid-career professionals who may have already developed substantial expertise in their field. The age group of 36 years old and above represents 22.9% (n=69), highlighting the presence of more seasoned individuals who could contribute deeper insights based on years of accumulated experience. Lastly, the youngest group, aged 20–25 years old, constitutes 21.6% (n=65), likely composed of fresh graduates or early-career professionals who bring new perspectives and recent academic exposure. The study's findings are strengthened by the balanced distribution of respondents across different age groups, bringing together a rich mix of fresh ideas, mid-level experience, and seasoned expertise. This diversity adds depth to the results and makes them relevant to all stages of a teaching career. This variety in age also suggests that the research results may be more representative, as they reflect the perspectives of individuals at different stages of professional and personal development.

Table 2.*Sex Profile of the Respondents*

Sex Profile	F	%
Male	131	43.5
Female	170	56.5
Total	301	100

Legend: f = frequency; and % = percentage

Table 2 shows the gender profile of the respondents. Out of the 301 participants, 131 (43.5%) are men, while 170 (56.5%) are women. This shows that female respondents slightly outnumber their male counterparts, indicating a moderate gender gap in the sample. The higher proportion of females could suggest that women are more actively involved, accessible, or willing to participate in the study. This distribution has significant implications for the analysis of results, as gender-related perspectives, experiences, and attitudes may influence responses, particularly if the study involves roles, opportunities, or challenges where societal expectations differ between men and women. Consequently, the overrepresentation of female respondents might slightly shape the findings toward viewpoints and experiences more common among women, which should be considered in interpreting the study's conclusions and in formulating recommendations that aim for gender inclusivity.

Table 3.*Years in Teaching Profile of the Respondents*

Experience in Inclusive Education Profile	F	%
1 to 5 years	63	20.9
6 to 10 years	87	28.9
11 to 15 years	74	24.6
16 to 20 years	60	19.9
21 years and above	17	5.6
Total	301	100

Legend: f = frequency; and % = percentage

Table 3 presents the respondents' years of teaching experience. The largest group, consisting of 87 teachers or 28.9%, has between 6 and 10 years of experience, indicating a strong presence of mid-career educators with substantial classroom knowledge across diverse learning environments. Additionally, there is a well-balanced mix of both early-career and more experienced teachers: 74 respondents (24.6%) have 11 to 15 years of experience, while 63 respondents (20.9%) have been teaching for 1 to 5 years. Meanwhile, 60 respondents or 19.9% have been in the profession for 16 to 20 years, reflecting a considerable number of highly experienced teachers, while only 17 respondents or 5.6% have 21 years or more in service, representing the most veteran group.

The distribution of teaching experience implies that the majority of respondents are in their prime professional years, with sufficient exposure to pedagogical practices and adaptability to educational reforms such as inclusive education. The relatively high proportion of teachers in the 6 to 15-year bracket may positively influence the implementation of inclusive education strategies, as these educators are often at the intersection of expertise, innovation, and openness to continuous professional development. However, the lower representation of those with over 21 years of experience may indicate potential gaps in the transmission of long-term institutional knowledge, underscoring the need for mentorship programs that bridge generational expertise and contemporary inclusive practices.

Table 4.*Educational Attainment Profile of the Respondents*

Educational Attainment Profile	F	%
Bachelor's Degree	56	18.6
Bachelor's Degree with MA units	95	31.6
Master's Degree	72	23.9
Master's Degree with Doctoral units	54	17.9

Doctoral Degree	24	8.0
Total	301	100

Legend: f = frequency; and % = percentage

Table 4 presents the respondents' educational attainment profile. Among the 301 respondents, the largest group comprises those with a bachelor's degree with MA units, totaling 95 individuals or 31.6% of the sample. This is followed by respondents who hold a master's degree, accounting for 72 individuals or 23.9%. Those with only a bachelor's degree constitute 56 individuals or 18.6%, while respondents with a master's degree and doctoral degrees comprise 54 individuals or 17.9%. The smallest proportion belongs to those who have completed a doctoral degree, with 24 respondents or 8.0%.

The data suggests that the majority of the respondents have pursued graduate studies, with a significant number already holding advanced degrees or having acquired graduate units. This reflects a strong inclination toward professional development and academic advancement among the participants. The high percentage of respondents with postgraduate qualifications implies that they are likely to possess a deeper theoretical understanding, broader pedagogical skills, and higher competency levels in their respective fields. Such a profile is advantageous for research and academic endeavors, as it indicates the respondents' readiness to engage in more complex and specialized educational discourse.

2. What is the teacher's competency level in conducting classroom-based research in terms of research concepts, classroom application, professional growth, student impact, and research barriers?

Assessing teachers' competency in classroom-based research is vital for determining their ability to apply research-informed strategies in teaching. Problem 2 evaluates this competency by examining knowledge of research concepts, practical classroom application, contributions to professional growth, impact on student learning, and existing research barriers. This comprehensive assessment highlights strengths and identifies gaps, providing a basis for targeted interventions to enhance educators' skills and promote effective, research-based teaching practices.

Table 5.

The Teacher's Competency Level in Conducting Classroom-based Research in Terms of Research Concepts.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I have a clear understanding of the key concepts related to classroom-based research.	3.00	0.79	High Level
2. I can explain the foundational theories and principles of research to my colleagues.	3.11	0.82	High Level
3. I apply the appropriate research methods and concepts when designing classroom-based studies.	3.06	0.79	High Level
4. I am confident in my ability to interpret and analyze research findings in the context of classroom practice.	3.01	0.80	High Level
5. I regularly integrate research concepts into my teaching strategies and decision-making processes.	3.03	0.81	High Level
Overall Weighted Mean	3.04	0.80	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 5 illustrates the teachers' competency level in conducting classroom-based research, specifically in terms of research concepts. The results indicate that all five indicators scored between 3.00 and 3.11, yielding an overall weighted mean of 3.04, which falls under the "High Level" category. Teachers demonstrated a solid understanding of key research concepts (3.00), the ability to explain foundational theories to colleagues (3.11), proper application of research methods (3.06), confidence in interpreting and analyzing research findings (3.01), and consistent integration of research concepts into teaching strategies (3.03).

These findings reveal that teachers possess a robust foundation in research concepts, equipping them to interpret and apply research insights to enhance instructional practices effectively. Craig and Nunes (2020) emphasize that action research fosters reflective teaching, allowing educators to evaluate and refine their methods critically. Similarly, Koshy (2020) asserts that research provides practical insights for addressing specific classroom challenges, while McNiff and Whitehead (2021) argue that teacher-led research empowers educators to act as change agents, improving both professional growth and student learning outcomes.

The strong implication of these results is that teachers' high competency in research concepts can drive substantial improvements in teaching and learning. Their capability to apply research systematically promotes evidence-based decision-making, encourages collaborative problem-solving, and strengthens a culture of reflective practice within schools. Moreover, it enhances teachers' ability to identify and address

diverse student needs, contributing to more inclusive and equitable learning environments as highlighted by Zeichner (2021). Ultimately, the high competency demonstrated in research concepts positions teachers to lead transformative educational practices, elevate instructional quality, and improve student outcomes, underscoring the critical role of action research in fostering sustained professional and institutional growth.

Table 6.

The Teacher's Competency Level in Conducting Classroom-based Research in Terms of Classroom Applications.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I regularly apply research findings to improve my teaching practices.	2.99	0.79	High Level
2. I integrate research-based strategies into my classroom activities to enhance student learning.	3.09	0.82	High Level
3. I modify my teaching methods based on the results of classroom-based research.	3.04	0.79	High Level
4. I encourage students to engage with research outcomes in classroom activities.	2.99	0.80	High Level
5. I use classroom-based research to inform my decision-making in lesson planning and delivery.	3.02	0.81	High Level
Overall Weighted Mean	3.03	0.80	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 6 presents the teachers' competency level in conducting classroom-based research in terms of classroom applications. The results show that each indicator scored between 2.99 and 3.09, leading to an overall weighted mean of 3.03, which falls within the High Level range. Teachers reported regularly applying research findings to improve teaching practices (2.99), integrating research-based strategies to enhance student learning (3.09), modifying teaching methods based on research outcomes (3.04), encouraging students to engage with research results (2.99), and using research to guide lesson planning and delivery (3.02).

The findings suggest that teachers effectively translate research concepts into practical classroom strategies, demonstrating the integration of theory into teaching practice. This aligns with Darby and Stewart

(2021), who argued that incorporating research-based practices into classrooms helps teachers refine their teaching strategies, directly influencing student performance and engagement. Hattie (2020) also emphasizes that evidence-based practices lead to more effective instructional methods and greater academic success for students. Additionally, as Robinson and Timperley (2020) pointed out, teachers adapt research findings to meet the specific needs of their students, ensuring that the research is applied effectively in practice rather than just staying theoretical. Kagan (2021) and Tellez and Jimenez (2021) further noted that using research insights enables teachers to shape adaptive and responsive learning environments while identifying gaps in teaching practices and proposing strategies for improvement.

The implications of these results are multifaceted. First, the high level of competency in classroom applications indicates that teachers are capable of implementing evidence-based strategies that enhance both teaching and student learning outcomes. Le Fevre and Cameron (2021) supported this, showing that applying research in classrooms improves classroom management and student engagement. Moreover, Fullan (2020) suggested that such an application promotes a culture of innovation, enabling teachers to contribute to the evolution of educational practices actively. Teachers who consistently apply research in their classrooms are also more likely to participate in professional learning communities (Vescio, Ross, & Adams, 2021), observe tangible improvements in student performance (Peeters & van der Sijde, 2021), and build confidence in their instructional abilities (Johnson & Smith, 2021). Overall, these findings underscore the critical role of classroom-based research in fostering reflective, proactive, and innovative teaching practices, ultimately contributing to professional growth and more effective student-centered learning environments.

Table 7.

The Teacher's Competency Level in Conducting Classroom-based Research in Terms of Professional Growth.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I actively seek professional development opportunities related to classroom-based research.	3.01	0.77	High Level
2. I regularly reflect on my teaching practices to improve my research skills.	3.01	0.80	High Level
3. I participate in workshops or training sessions focused on enhancing my research competencies.	3.02	0.80	High Level
4. I apply new research knowledge to improve my teaching strategies.	3.13	0.82	High Level
5. I share research findings with colleagues to promote professional growth within the school community.	3.00	0.80	High Level
Overall Weighted Mean	3.03	0.80	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 7 illustrates the teachers' competency level in conducting classroom-based research with respect to professional growth. The indicators scored between 3.00 and 3.13, resulting in an overall weighted mean of 3.03, which is classified as a High Level. Specifically, teachers reported actively seeking professional development opportunities related to classroom-based research (3.01), consistently reflecting on their teaching practices to enhance research skills (3.01), participating in workshops or training sessions aimed at improving research competencies (3.02), applying newly acquired research knowledge to refine instructional strategies (3.13), and sharing research findings with colleagues to foster professional growth within the school community (3.00).

The findings indicate that teachers are engaged in continuous professional development initiatives that strengthen their research competencies and enhance instructional effectiveness. This aligns with Day and Gu (2020), who emphasized that sustained professional development is critical for maintaining teacher effectiveness and responsiveness to student needs, while reflective practices contribute directly to improved student achievement. Darling-Hammond (2021) further highlighted that ongoing engagement with emerging educational trends enhances teaching effectiveness. Timperley (2020) noted that professional growth is most impactful when it is closely aligned with classroom realities, and Berger (2021) emphasized that collaborative professional development, involving peer interaction and shared insights, promotes substantial growth. Similarly, Garcia and Wolff (2020) underscored the importance of mentorship in guiding teacher reflection and professional development.

The implications of these results are significant. The high level of professional growth evidenced in this study suggests that teachers' active engagement in research-driven development cultivates a reflective and evidence-based approach to teaching. Darling-Hammond and Hyler (2020) stressed that providing teachers with access to quality development programs, sufficient time, and necessary resources fosters a culture of continuous learning, while Trolan and Jach (2020) associated professional growth with increased job satisfaction and teaching efficacy. Furthermore, Kennedy (2021) and McMahon and O'Neill (2020) argued that integrating action research into professional development enhances teachers' problem-solving abilities and pedagogical knowledge, ultimately improving instructional quality and student learning outcomes. Collectively, these findings underscore the critical role of classroom-based research in promoting sustained professional growth and advancing overall educational effectiveness.

Table 8.

The Teacher's Competency Level in Conducting Classroom-based Research in Terms of Student Impact.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. The research I conduct positively impacts students' learning outcomes.	2.97	0.80	High Level
2. My classroom-based research helps identify areas where students need improvement, leading to better support for them.	2.98	0.79	High Level
3. The results of my research contribute to enhancing student engagement and motivation in the classroom.	3.04	0.78	High Level
4. Classroom-based research has allowed me to apply effective strategies that support diverse student learning needs.	3.00	0.78	High Level
5. The research findings I generate have helped improve students' academic performance and overall classroom experience.	3.03	0.80	High Level
Overall Weighted Mean	3.00	0.79	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 8 presents the teachers' competency level in conducting classroom-based research in terms of student impact. The indicators received scores ranging from 2.97 to 3.04, with an overall weighted mean of 3.00, indicating a High Level. Specifically, teachers reported that their research positively influenced student learning outcomes (2.97), helped identify areas for student improvement and provided better support (2.98), enhanced student engagement and motivation (3.04), allowed them to apply strategies addressing diverse learning needs (3.00), and improved overall student performance and classroom experience (3.03).

The findings suggest that teachers recognize the significant role of classroom-based research in shaping student outcomes. This aligns with Black and Wiliam (2020), who emphasized that evidence-based instructional strategies derived from research lead to measurable improvements in student achievement. Muijs

and Reynolds (2020) similarly note that adapting teaching practices based on research results enhances performance, particularly through differentiated instruction. Bandura (2021) highlights that research-informed practices strengthen students' self-efficacy, as teachers set high expectations and implement effective strategies, which in turn boost confidence and academic success. Hattie (2020) emphasizes that research-backed strategies enhance student engagement by addressing each student's individual learning needs. Similarly, Zimmerman (2021) points out that these approaches help foster a supportive environment where students feel valued and appreciated.

Additionally, Carter and Lee (2021) and Duncan and Bishop (2020) point out that research-informed teaching promotes equitable learning opportunities, particularly for underperforming or marginalized groups, contributing to more inclusive classrooms. Wong (2021) highlights the motivational benefits, noting that research-based strategies stimulate student interest and participation. Johnson and Green (2020) further emphasize that teachers engaged in research introduce innovative approaches, enhancing the overall classroom experience.

The high level of teacher competency in leveraging research to positively impact students underscores the importance of embedding research into pedagogical practice. Teachers' ability to apply research findings translates into improved learning outcomes, greater student engagement, and more equitable instruction. This highlights the need for continuous professional development focused on action research, ensuring that educators are equipped to implement evidence-based strategies effectively. Moreover, these findings suggest that school leaders should encourage a culture of research-informed practice, as it not only benefits individual student achievement but also strengthens the overall quality of education.

Table 9.

The Teacher's Competency Level in Conducting Classroom-based Research in Terms of Research Barrier.

Indicators	$\bar{x}$	SD	Respondents
			Verbal Interpretation
1.			
2. I encounter a lack of time to conduct classroom-based research due to my teaching responsibilities.	3.01	0.82	High Level
3. Limited access to research resources (e.g., journals, technology, training) hinders my ability to conduct classroom-based research.	2.99	0.80	High Level
4. Insufficient support from the administration prevents me from fully engaging in classroom-based research.	3.05	0.78	High Level
5. I face challenges in securing funding or resources for classroom-based research.	3.01	0.79	High Level
6. I encounter resistance from colleagues or school leadership when implementing classroom-based research initiatives.	3.06	0.80	High Level
Overall Weighted Mean	3.02	0.80	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 9 highlights the teacher's proficiency in conducting classroom-based research related to research barriers, with an overall weighted mean of 3.02, indicating a High Level. This suggests that while teachers experience notable barriers, they still maintain a relatively consistent level of competency despite these challenges. The highest-rated barrier was encountering resistance from colleagues or school leadership (3.06), followed closely by insufficient administrative support (3.05) and lack of time due to teaching responsibilities (3.01). Teachers also cited limited access to research resources (2.99) and difficulty securing funding (3.01) as significant constraints.

These findings are consistent with O'Neill and McMahon (2020), who identify time constraints and heavy workload as significant obstacles to teacher-led research. The challenge of balancing teaching responsibilities with research activities often limits teachers' ability to engage deeply in classroom-based inquiry. Altrichter et al. (2021) stress that administrative support is crucial in overcoming these barriers, as school leadership plays a pivotal role in providing both time and resources. Without such support, teachers' research endeavors remain fragmented and unsustainable.

In addition, Elliott (2021) further points out that school cultures that fail to prioritize research may inadvertently discourage teachers from pursuing it. Evans and Teitelbaum (2020) advocate for cultivating a

supportive research culture in schools, positioning research not as an additional burden but as an integral component of professional growth.

Financial and resource limitations, as highlighted by Zhang and Lee (2021), also restrict teachers' ability to undertake meaningful research. Johnson and Yu (2021) emphasize the importance of collaborative opportunities and mentorship in reducing isolation and making research more approachable for educators.

The persistence of these barriers indicates that institutional, cultural, and structural changes are necessary to harness the potential of classroom-based research fully. Schools should prioritize reducing workload pressures, expanding access to resources and funding, and building a research-supportive culture through mentorship, collaboration, and targeted training. Addressing these barriers not only empowers teachers to conduct meaningful research but also ensures that the benefits of evidence-based practices are fully realized in improving both teaching quality and student learning outcomes.

3. What is the extent to which teachers actively engage in classroom-based research in terms of willingness, research frequency, collaboration, research integration, and research motivation?

To improve student outcomes and enhance teaching methods, it is important to understand how actively educators engage in classroom-based research. This engagement can be assessed across five key dimensions: willingness, research frequency, collaboration, research integration, and research motivation. Examining these aspects provides valuable insights into how teachers approach research activities, what motivates their participation, the frequency with which they conduct research, their collaborative efforts with peers, and how effectively they integrate research findings into their teaching strategies. By evaluating these dimensions, we can identify strengths and areas needing improvement, enhancing overall research utilization and promoting continuous professional development among educators. This holistic approach aims to leverage classroom-based research to foster innovation, drive educational success, and support a culture of ongoing learning and growth.

Table 10.

The Extent to Which Teachers Actively Engage in Classroom-based Research in Terms of Willingness.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I am willing to participate in classroom-based research to improve my teaching practices.	3.05	0.83	To a Moderate Extent
2. I actively seek opportunities to engage in research projects related to my classroom teaching.	3.09	0.81	To a Moderate Extent
3. I am open to trying new research methods to enhance my students' learning outcomes.	3.05	0.79	To a Moderate Extent
4. I believe classroom-based research is essential to my professional development as a teacher.	3.03	0.79	To a Moderate Extent
5. I am enthusiastic about the possibility of conducting research in my classroom.	3.06	0.80	To a Moderate Extent
Overall Weighted Mean	3.05	0.80	To a Moderate Extent

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = To a Very Great Extent 2.50 – 3.49 = To a Moderate Extent; 1.50 – 2.49 = To a Slight Extent; 1.00 – 1.49 = Not at all.

Table 10 shows that, with an overall weighted mean of 3.05 (To a Moderate Extent), teachers are generally willing to participate in classroom-based research actively. This indicates that while teachers recognize the value of classroom-based research, their active participation remains at a moderate level rather than being fully maximized. Among the indicators, the highest mean score was for actively seeking opportunities to engage in research projects (3.09), followed by enthusiasm about conducting research in the classroom (3.06). The lowest, though still moderate, was the belief that classroom-based research is essential to professional development (3.03), which suggests some teachers may not yet view research as an indispensable part of their career growth.

These findings align with Brindley (2019), who notes that teachers' willingness to engage in research is closely linked to professional autonomy and institutional support. Without an enabling environment, even willing teachers may limit their research participation. Sato and Matano (2020) further stress that teachers are more inclined to conduct research when they perceive it as directly relevant to student outcomes and their professional growth. The moderate rating here may imply that some educators still question the direct applicability of research to their daily teaching.

Garcia et al. (2021) emphasize that willingness increases when teachers have access to sufficient resources, training, and support from school leaders, factors that, if insufficient, can suppress research engagement despite individual interest. Similarly, Thomas and Lee (2020) observe that when research is seen

as a tool to refine pedagogical strategies, teachers are more likely to invest effort in it. The moderate ratings in this study indicate that teachers recognize research's potential benefits but face motivational or contextual constraints in pursuing it actively.

Larkin (2021) also highlights that willingness to engage in action research reflects a teacher's motivation to improve professional competence. A lack of confidence in research skills or unfamiliarity with methodologies could be contributing to the moderate extent of engagement seen in the findings.

The moderate willingness levels suggest that while teachers are generally open to classroom-based research, systemic and motivational factors may be limiting fuller engagement. Strengthening professional development programs that connect research with practical classroom needs, providing ongoing mentorship, and fostering a school culture that views research as integral to teaching practice could elevate willingness from moderate to excellent. By addressing both the attitudinal and structural factors influencing research engagement, schools can create an environment where teachers not only value research but actively integrate it into their professional routines.

Table 11.

The Extent to Which Teachers Actively Engage in Classroom-based Research in Terms of Research Frequency.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I frequently engage in classroom-based research as part of my teaching practice.	3.02	0.74	To a Moderate Extent
2. I regularly incorporate research-based activities in my classroom to enhance learning outcomes.	3.01	0.75	To a Moderate Extent
3. I research regularly to address specific classroom challenges.	3.09	0.79	To a Moderate Extent
4. I often analyze student performance data to guide my research efforts in the classroom.	3.06	0.80	To a Moderate Extent
5. I consistently apply findings from classroom-based research to improve my teaching methods.	3.02	0.81	To a Moderate Extent
Overall Weighted Mean	3.04	0.78	To a Moderate Extent

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = To a Very Great Extent 2.50 – 3.49 = To a Moderate Extent; 1.50 – 2.49 = To a Slight Extent; 1.00 – 1.49 = Not at all.

Table 11 illustrates the frequency of teachers' active participation in classroom-based research, with an overall weighted mean of 3.04, indicating a moderate level of involvement. This suggests that while teachers engage in research activities periodically, such engagement is not yet a consistent and integral part of their professional routine. Among the indicators, the highest mean score was researching regularly to address specific classroom challenges (3.09), indicating that teachers are most inclined to conduct research when it directly addresses immediate instructional concerns. The lowest, though still moderate, was regular incorporation of research-based activities in the classroom (3.01), suggesting that translating research into consistent classroom practice remains an area for growth.

These results align with Jackson and Porter (2020), who found that frequent research engagement significantly improves teaching outcomes, as teachers who consistently apply evidence-based strategies create more effective learning environments. The moderate frequency observed in this study may limit the sustained integration of such strategies, reducing their long-term impact on student learning. Brown et al. (2021) further highlight that regular research involvement accelerates professional growth, enabling teachers to refine their practices and adapt to diverse student needs, benefits that may not be fully realized if engagement remains at moderate levels.

Reed and Wallace (2020) emphasize that frequent research activity allows educators to stay current with educational trends, making them more likely to implement innovative, student-centered methods. The moderate frequency in the current findings suggests that while teachers occasionally access new methodologies, they may not yet be doing so often enough to keep pace with evolving best practices. Similarly, Collins and Moore (2020) argue that regular data-driven reflection helps teachers address challenges more effectively; however, infrequent research cycles can delay the timely resolution of classroom issues.

Mills (2021) adds that frequent research empowers teachers to employ a broader array of instructional strategies, thereby increasing student engagement and achievement. The moderate ratings here imply that while teachers have some exposure to diverse strategies, the lack of high-frequency research may constrain their ability to apply innovative approaches across all learning consistently.

The findings point to a need for institutional strategies that promote a shift from moderate to high-frequency research engagement. This could include integrating research activities into teachers' regular workload, providing protected time for inquiry, and establishing collaborative research groups within schools. By embedding research into the rhythm of teaching, educators can move from occasional engagement toward

sustained, evidence-driven practice, ultimately enhancing both professional growth and student outcomes.

Table 12.

The Extent to Which Teachers Actively Engage in Classroom-based Research in Terms of Collaborations.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I actively collaborate with colleagues in designing and conducting classroom-based research.	3.04	0.73	To a Moderate Extent
2. I seek and share research-based insights with fellow teachers to improve teaching strategies.	3.03	0.74	To a Moderate Extent
3. I participate in team-based research projects to address common classroom challenges.	3.05	0.77	To a Moderate Extent
4. I engage in professional discussions and workshops to enhance collaborative research efforts.	3.15	0.80	To a Moderate Extent
5. I receive sufficient support from my school in fostering collaborative research initiatives.	3.04	0.79	To a Moderate Extent
Overall Weighted Mean	3.06	0.77	To a Moderate Extent

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = To a Very Great Extent 2.50 – 3.49 = To a Moderate Extent; 1.50 – 2.49 = To a Slight Extent; 1.00 – 1.49 = Not at all.

The overall weighted mean of 3.06 (To a Moderate Extent) indicates how actively teachers participate in classroom-based research in terms of cooperation, as seen in Table 12. This suggests that while collaboration is present in research activities, it is not yet maximized to its full potential. The highest-rated indicator, engaging in professional discussions and workshops to enhance collaborative research efforts (3.15), indicates that teachers are most involved in structured, formal collaboration platforms. Meanwhile, seeking and sharing research-based insights with fellow teachers (3.03) and collaborating with colleagues in designing and conducting classroom-based research (3.04) reflect moderate but not highly frequent peer-to-peer research engagement. The consistent “Moderate Extent” ratings across indicators suggest a steady but limited collaborative culture in research activities.

These findings are consistent with Johnson et al. (2020), who highlight that teacher collaboration in research fosters collective problem-solving by enabling the exchange of insights, resources, and strategies that enhance both research quality and classroom instruction. Liu and Lee (2021) further argue that collaborative action research promotes mutual learning, as teachers can observe varied practices, test new methods, and

refine strategies based on peer feedback, thereby embedding a culture of continuous improvement within schools.

According to Duffy et al. (2021), collaborative research plays a vital role in professional growth by encouraging the sharing of best practices and the adoption of innovative teaching methods. This aligns with recent studies, which suggest that although a moderate level of collaboration already offers meaningful benefits, there is still room to strengthen it for even greater impact. Similarly, Spencer and Thomas (2020) note that research collaboration strengthens professional relationships, which in turn improves teamwork, communication, and overall school climate, a benefit that may not be fully realized when collaboration is only moderately frequent.

The data suggest that increasing collaboration in classroom-based research could yield substantial benefits in teaching quality, innovation, and professional relationships. Schools may need to institutionalize collaborative structures—such as research teams, peer mentoring, and cross-departmental research projects—while providing dedicated time and administrative support for joint research efforts. Strengthening these collaborative avenues could transform research from a primarily individual endeavor into a collective, school-wide driver of instructional improvement and professional growth.

Table 13.

The Extent to Which Teachers Actively Engage in Classroom-based Research in Terms of Research Integration.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I effectively integrate classroom-based research findings into my teaching strategies to enhance student learning.	2.99	0.78	To a Moderate Extent
2. I regularly apply research-based practices to improve instructional methods and classroom management.	3.04	0.75	To a Moderate Extent
3. I align my lesson planning and curriculum development with insights gained from classroom-based research.	3.04	0.79	To a Moderate Extent
4. I use research findings to assess and refine student learning outcomes and teaching effectiveness.	3.08	0.80	To a Moderate Extent
5. I actively incorporate classroom-based research into professional discussions and collaborative teaching practices.	3.14	0.80	To a Moderate Extent
Overall Weighted Mean	3.06	0.78	To a Moderate Extent

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = To a Very Great Extent 2.50 – 3.49 = To a Moderate Extent; 1.50 – 2.49 = To a Slight Extent; 1.00 – 1.49 = Not at all

With an overall weighted mean of 3.06 ("To a Moderate Extent"), Table 13 shows how much teachers use classroom-based research in their instruction. This suggests that while research integration is present in instructional practices, it is not yet consistently or deeply embedded across all teaching activities. Among the indicators, the highest mean score was for actively incorporating classroom-based research into professional discussions and collaborative teaching practices (3.14), indicating that teachers are relatively more inclined to share and discuss research findings with peers. Conversely, the lowest score was for effectively integrating classroom-based research findings into teaching strategies to enhance student learning (2.99), suggesting that while discussions about research may occur, its direct and systematic application to classroom instruction is slightly less frequent.

These findings align with Guskey's (2021) assertion that integrating research into teaching is essential for improving educational outcomes. By applying evidence-based findings, teachers can better address diverse student needs, foster engagement, and ensure that instructional practices remain grounded in current, credible evidence rather than outdated or anecdotal approaches. Cross (2020) adds that effective research integration requires not only access to research but also the ability to interpret and translate findings into actionable strategies, a skill that may explain why integration levels remain moderate.

Kohn (2020) emphasizes that research integration enables personalized learning, as teachers can adapt their methods based on data and evidence, thereby catering to individual learning profiles. This is consistent with Sutton's (2021) perspective that integration equips teachers with a toolkit of proven strategies for designing lessons that are both engaging and effective, aligning instruction with students' varied learning styles.

Moreover, Rogers (2020) highlights that research integration contributes to building a culture of inquiry within schools. When teachers consistently embed research into their planning, instruction, and assessment, they model evidence-based thinking for students, reinforcing the value of continuous learning and critical reflection.

These ratings suggest that while teachers recognize the importance of research integration, barriers such as limited time, insufficient training in research interpretation, or lack of institutional support may hinder its consistent application. Strengthening professional development in research literacy, providing structured opportunities for research applications, and embedding integration into curriculum design could elevate research from an occasional enhancement to a core component of daily teaching practice, thereby maximizing its potential to improve student outcomes.

Table 14.

The Extent to Which Teachers Actively Engage in Classroom-based Research in Terms of Research Integration.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I feel motivated to conduct classroom-based research as it enhances my teaching effectiveness.	2.99	0.78	To a Moderate Extent
2. I am encouraged to engage in research due to the professional recognition and career advancement opportunities it provides.	3.04	0.75	To a Moderate Extent
3. I actively seek research opportunities because of my passion for improving student learning outcomes.	3.04	0.79	To a Moderate Extent
4. I am driven to conduct research due to the availability of institutional support and resources.	3.08	0.80	To a Moderate Extent
5. I find fulfillment in researching as it improves my school's educational practices.	3.14	0.80	To a Moderate Extent
Overall Weighted Mean	3.06	0.78	To a Moderate Extent

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = To a Very Great Extent 2.50 – 3.49 = To a Moderate Extent; 1.50 – 2.49 = To a Slight Extent; 1.00 – 1.49 = Not at all.

Table 14 shows that teachers' motivation to engage in classroom-based research registers an overall weighted mean of 3.06 ("To a Moderate Extent"), suggesting that while motivation is present, it is not yet at an optimal level to drive consistent and sustained research engagement fully. The highest-rated indicator, finding fulfillment in research as it improves the school's educational practices (3.14), reflects a strong sense of collective benefit and institutional contribution. The lowest-rated item, feeling motivated to research because it enhances teaching effectiveness (2.99), implies that while teachers recognize research's value, personal instructional improvement is not yet a primary motivational driver for all.

The findings are consistent with Wright and Lee's (2020) assertion that the desire for professional growth significantly shapes teachers' motivation to engage in research. Motivation, both internal and external, plays a key role in influencing the level of research participation. According to Harris and Zhang (2020), teachers driven by internal factors—such as a passion for improving student learning and a strong

commitment to professional growth—are more likely to sustain their research efforts over time. This perspective is reinforced by Smith and Johnson (2021), who note that extrinsic motivators, including recognition, career advancement, and institutional support, can strengthen commitment and encourage long-term participation in research initiatives.

Moreover, Thomas (2020) underscores the role of motivation in fostering a growth mindset among teachers. Motivated educators often see research challenges as chances to grow and improve their skills, rather than as obstacles. This positive mindset not only improves the quality of their research but also helps them stay resilient and committed to their research efforts, even when faced with difficulties.

The moderate level of motivation revealed in this table points to the need for schools to implement targeted strategies to both strengthen intrinsic motivation (e.g., aligning research projects with teachers' passions and student needs) and enhance extrinsic incentives (e.g., recognition programs, career progression pathways, and dedicated research support). By nurturing both motivational dimensions, schools can create an environment where research is not only valued but is actively pursued as a core component of professional practice, thereby amplifying its positive impact on teaching effectiveness, student achievement, and institutional growth.

4. What is the level of teachers' productivity in conducting classroom-based research in terms of research output, presentation/publication, teaching improvements, student outcomes, and administrative support?

Table 15.

The Level of Teachers' Productivity in Conducting Classroom-based Research in Terms of Research Output.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I develop and complete classroom-based research projects to enhance teaching and learning.	3.18	0.78	High Level
2. I produce research reports that document findings and recommendations for instructional improvement.	3.34	0.54	High Level
3. I create research-based materials or strategies to address specific classroom challenges.	3.24	0.56	High Level
4. I submit research outputs for school, district, or division-level evaluation and recognition.	3.17	0.60	High Level
5. I share my classroom-based research findings with colleagues for professional learning and collaboration.	3.06	0.78	High Level
Overall Weighted Mean	3.20	0.67	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Table 15 shows that teachers demonstrate a high level of productivity in terms of research output, with an overall weighted mean of 3.20. This suggests that teachers are consistently able to complete research projects, produce relevant reports, and create research-based materials aimed at addressing classroom needs. The highest-rated indicator, producing research reports that document findings and recommendations for instructional improvement (3.34), indicates a strong emphasis on formalizing and disseminating research results. Meanwhile, the lowest-rated indicator, sharing classroom-based research findings with colleagues (3.06), suggests there is room to strengthen peer-to-peer dissemination and collaborative use of research outputs.

These findings align with Green and Morrison (2020), who argue that significant research output directly supports both teacher performance and the advancement of educational practices. By producing well-documented studies, teachers not only enhance their instructional effectiveness but also contribute valuable insights to the broader educational community. Similarly, Katz and Williams (2020) highlight that publishing research boosts professional credibility and enables teachers to influence pedagogical innovations and policy discussions.

The role of research output in fostering continuous professional development is emphasized by Allen et al. (2021), who note that teachers who consistently publish are better positioned to integrate emerging best practices into their classrooms. This aligns with Smith and Robinson (2021), who stress that the act of producing research builds professional identity and encourages experimentation with new teaching strategies.

Beyond individual benefits, research output can also shape the direction of educational reform. Brown and Hall (2020) describe it as a tool for challenging traditional practices and proposing innovative solutions, while Taylor and Anderson (2020) point out its influence in shaping collective teaching effectiveness across educational networks. Furthermore, Robinson et al. (2021) emphasize that sustained research productivity reflects a teacher's long-term commitment to educational transformation, a particularly critical trait in fields like STEM that demand constant innovation.

From a personal development perspective, Mitchell and Brown (2021) argue that producing research makes teachers more reflective practitioners, leading to more deliberate and evidence-based instructional choices. Gonzalez and Green (2021) add that high research output can significantly boost teacher self-efficacy, empowering them to tackle more complex educational challenges with confidence.

While the results indicate that teachers are already performing at a high level in research production, there remains potential to amplify the sharing and collaborative utilization of research findings. Strengthening peer dissemination channels, through workshops, professional learning communities, or collaborative publications, would not only increase the reach and impact of research outputs but also embed evidence-based practices more deeply into the school culture. Doing so could elevate productivity from a “high” to a “very high” level, further positioning teachers as active contributors to educational improvement and innovation

Table 16.

The Level of Teachers' Productivity in Conducting Classroom-based Research in Terms of Presentation/ Publication.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I present the findings of my classroom-based research at school-based research conferences or meetings.	3.05	0.72	High Level
2. I submit my research studies for publication in academic or educational journals.	3.06	0.78	High Level
3. I participate in research presentations at district, regional, or national conferences.	3.26	0.55	High Level
4. I collaborate with colleagues to publish research findings in educational publications.	3.30	0.53	High Level
5. I seek opportunities to disseminate my classroom-based research through online platforms or academic forums.	3.07	0.77	High Level
Overall Weighted Mean	3.15	0.69	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

The data in Table 16 show that teachers demonstrate a high level of productivity in the presentation and publication of classroom-based research, with an overall weighted mean of 3.15 (SD = 0.69). Among the indicators, the highest mean score is for collaborating with colleagues to publish research findings in educational publications (M = 3.30, SD = 0.53), followed by participating in research presentations at district,

regional, or national conferences ($M = 3.26$, $SD = 0.55$). The lowest, though still rated high, is presenting findings at school-based research conferences or meetings ($M = 3.05$, $SD = 0.72$).

These findings suggest that while teachers are consistently engaged in sharing their research work, they are more actively involved in collaborative publication and external conference participation than in smaller-scale, school-based presentations. This may reflect the growing emphasis on expanding professional reach beyond the immediate school environment to engage with wider academic and professional communities.

Taylor and Anderson (2020) highlight that presenting at conferences and publishing in academic journals significantly enhances teachers' professional visibility, providing platforms to share innovative practices and influence educational reform. Similarly, King and O'Connor (2021) note that such engagement improves academic credibility, creating pathways for career advancement and leadership opportunities.

Gonzalez et al. (2020) found that teachers engaged in collaborative research benefit from multidisciplinary discussions, which strengthen professional networks and inspire innovative teaching practices. Their findings align with the relatively high ratings for collaborative publications. Moreover, Collins and Zhang (2021) emphasize that both presentation and publication develop teachers' ability to communicate complex ideas effectively, a skill that benefits classroom instruction and professional collaboration alike.

From an institutional perspective, these activities not only enhance individual teacher growth but also contribute to the school's professional reputation. Parker and Green (2021) stress that publication and presentation activities give teachers a voice in shaping educational policy and practice, while Edwards and Mitchell (2021) observe that publication in reputable venues often attracts greater institutional support for sustained research efforts.

The high level of productivity in research dissemination suggests that teachers in the study are not only generating valuable research but are also actively contributing to broader professional dialogues. However, the slightly lower engagement in school-based presentations implies a potential missed opportunity for localized knowledge sharing. To foster a culture of inquiry and continuous improvement, schools should encourage more internal dissemination sessions where all faculty members can learn from research findings (Robinson et al., 2020; Williams et al., 2021).

Table 17.

The Level of Teachers' Productivity in Conducting Classroom-based Research in Terms of Teaching Improvements.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. I apply findings from my classroom-based research to improve my teaching strategies.	3.05	0.79	High Level
2. I modify my instructional methods based on insights gained from my research.	3.23	0.55	High Level
3. I incorporate research-based interventions to address student learning challenges.	3.14	0.50	High Level
4. I evaluate and refine my lesson plans using data gathered from my research.	3.03	0.77	High Level
5. I share the best teaching practices derived from my research with colleagues for continuous improvement.	3.33	0.54	High Level
Overall Weighted Mean	3.16	0.66	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

The data in Table 17 show that teachers exhibit a high level of productivity in applying classroom-based research to improve their teaching, with an overall weighted mean of 3.16 (SD = 0.66). Among the indicators, the highest-rated is sharing best teaching practices derived from research with colleagues for continuous improvement (M = 3.33, SD = 0.54), followed closely by modifying instructional methods based on research insights (M = 3.23, SD = 0.55). The lowest-rated, though still at a high level, is evaluating and refining lesson plans using data from research (M = 3.03, SD = 0.77).

These results suggest that teachers are actively using research to enhance instructional quality, both through individual classroom strategies and collaborative professional sharing. The prominence of peer collaboration aligns with Anderson and Lee's (2020) view that disseminating research findings among colleagues promotes a school-wide culture of innovation and shared responsibility for student learning.

The findings also affirm Davis et al.'s (2020) conclusion that teachers engaged in research tend to adopt evidence-based practices that strengthen both teaching effectiveness and student achievement. Johnson and Thomas (2021) further emphasize that applying research to teaching facilitates differentiated instruction, enabling teachers to address diverse learning needs better.

Moreover, the high ratings support Green's (2020) argument that research integration fosters reflective practice, allowing teachers to continuously adapt to changing classroom dynamics. Robinson et al. (2021) highlight that such approaches also encourage critical thinking and learner autonomy, while Gonzalez et al. (2021) note that research-informed teaching enhances the use of technology and other innovative resources to boost student engagement.

The consistently high ratings indicate that teachers in this study are not only capable of conducting classroom-based research but are also effectively integrating findings into teaching practice. This reinforces the idea that research-driven teaching contributes to sustained professional growth, more effective instructional delivery, and improved student learning outcomes. Strengthening institutional support for research application through professional development programs, mentoring, and resource allocation could further elevate teaching quality and foster an even stronger culture of evidence-based practice within schools.

Table 18.

The Level of Teachers' Productivity in Conducting Classroom-based Research in Terms of Student Outcomes.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. My classroom-based research helps improve students' academic performance.	3.05	0.77	High Level
2. I use research findings to enhance my teaching strategies for better student outcomes.	3.20	0.52	High Level
3. My research activities contribute to addressing learning difficulties among my students.	3.26	0.52	High Level
4. I observe positive behavioral changes in students as a result of implementing research-based strategies.	3.03	0.78	High Level
5. I share research-based interventions with colleagues to improve overall student achievement.	3.06	0.78	High Level
Overall Weighted Mean	3.12	0.69	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

The results in Table 18 reveal that teachers demonstrate a high level of productivity in leveraging classroom-based research to enhance student outcomes, with an overall weighted mean of 3.12 (SD = 0.69). Among the indicators, the highest-rated is contributing to addressing learning difficulties among students ($M = 3.26$, $SD = 0.52$), indicating that teachers place significant emphasis on using research to tailor interventions that meet individual learning needs. This is closely followed by using research findings to enhance teaching strategies for better student outcomes ($M = 3.20$, $SD = 0.52$). The lowest-rated indicator, though still within the high-level range, is observing positive behavioral changes in students ($M = 3.03$, $SD = 0.78$), suggesting that while academic gains are well-documented, behavioral transformations may require more time and sustained intervention to manifest fully.

These findings align with those of Harrold et al. (2021), who suggest that teachers interested in research are more likely to adopt teaching methods that boost students' academic achievement. The consistent high ratings reflect teachers' commitment to evidence-based practices, which Carty and Hail (2020) note are essential in addressing the needs of diverse learners and promoting equitable outcomes. Furthermore, Patel (2021) emphasizes that such practices foster motivation and active engagement, which are critical precursors to improved academic achievement.

Wong (2020) suggests that incorporating research into instruction strengthens higher-order thinking skills, such as critical analysis and problem-solving, and the data backs up this claim. Robin et al. (2021) support this by noting that students taught through research-based strategies tend to perform better on standardized assessments, a reflection of alignment with recognized best practices.

Additionally, Brown et al. (2020) highlight that research-driven teaching contributes to students' self-efficacy, boosting their confidence and willingness to tackle academic challenges. Smith and Orlyn (2021) further point out that the use of research-informed formative assessments ensures that students receive timely and targeted feedback, a key driver of learning improvement. Beyond academics, Sue and Michelle (2021) stress that research-based approaches help strengthen teacher-student relationships, enhancing motivation and emotional support, factors closely tied to student success.

The consistently high ratings across all indicators suggest that teachers are not only applying research to improve instruction but are also directly influencing student achievement, engagement, and resilience. These results reinforce Gonzalez's (2021) assertion that research-based teaching contributes to improved retention and graduation rates, as well as Rodriguez's (2021) finding that students develop stronger

problem-solving skills and academic resilience when taught by research-engaged teachers. Sustaining and scaling these practices through institutional support, collaborative research initiatives, and ongoing professional development could amplify their impact on both academic and behavioral outcomes, ensuring that student success remains at the core of educational practice.

Table 19.

The Level of Teachers' Productivity in Conducting Classroom-based Research in Terms of Administrative Support.

Indicators	$\bar{x}$	Respondents	
		SD	Verbal Interpretation
1. The school administration provides sufficient time and resources to support my classroom-based research.	3.06	0.78	High Level
2. I receive encouragement and recognition from school leaders when engaging in research activities.	3.25	0.53	High Level
3. Administration facilitates access to necessary research materials, data, and professional development opportunities.	3.03	0.78	High Level
4. I am allowed to present and apply my research findings within the school community.	3.06	0.78	High Level
5. The school administration provides financial or logistical support (e.g., funding, mentoring, reduced workload) to assist in conducting research.	3.04	0.76	High Level
Overall Weighted Mean	3.09	0.74	High Level

Legend: $\bar{x}$ = weighted mean; 3.50 – 4.00 = Very High Level 2.50 – 3.49 = High Level; 1.50 – 2.49 = Low Level; 1.00 – 1.49 = Very Low Level

Regarding administrative support, Table 19 reveals that teachers have a high level of productivity in conducting classroom-based research, with an overall weighted mean of 3.09 (SD = 0.74). This suggests that teachers generally feel supported by their school administration when it comes to research initiatives, although there is still room for improvement.

The highest-rated indicator is receiving encouragement and recognition from school leaders when engaging in research activities (M = 3.25, SD = 0.53), suggesting that moral support and acknowledgment are

strong motivators for teacher engagement in research. This aligns with Marquez (2021), who asserts that administrative encouragement sustains teachers' research productivity by fostering a sense of value and professional affirmation. Similarly, Zapanta et al. (2020) emphasize that such recognition cultivates a culture of inquiry, promoting collaboration and shared purpose among educators.

Moderately high ratings are also seen in indicators such as administration providing sufficient time and resources ($M = 3.06$, $SD = 0.78$) and facilitating access to necessary materials, data, and professional development ($M = 3.03$, $SD = 0.78$). These findings resonate with Ortega and Paet (2020), who stress that logistical and material support, including funding and access to research tools, is essential for meaningful and sustained teacher-led research. Parker (2020) likewise underscores the importance of allocating dedicated time for research engagement, as this enables teachers to integrate findings into daily teaching practices effectively.

Although financial and logistical support ($M = 3.04$, $SD = 0.76$) and opportunities to present and apply research findings ($M = 3.06$, $SD = 0.78$) were also rated at a high level, they are comparatively lower than recognition and encouragement. This suggests that while teachers value the moral support they receive, more tangible institutional backing, such as research grants, reduced workload, or mentoring, could further enhance their research productivity. As Sarmiento et al. (2021) note, well-supported teachers are more likely to remain in the profession, thereby fostering long-term professional growth.

The consistently high ratings indicate that administrative support is a key enabler of teacher productivity in classroom-based research. As Rosa et al. (2021) and Villanueva et al. (2020) contend, such backing not only sustains research engagement but also leads to innovation, experimentation, and improved teaching outcomes. However, the slightly lower ratings in logistical and financial assistance highlight an area for strategic improvement. Strengthening resource allocation, easing workload demands, and expanding professional development opportunities could maximize the impact of teacher-led research. Doing so, as Aguado et al. (2021) argue, empowers teachers with greater professional agency, encouraging them to pursue innovative projects that benefit both classroom practice and the wider school community.

5. Is there a significant difference in the teacher's level of competency in conducting classroom-based research when grouped according to profile?

Improving teaching methods and student learning outcomes depends on classroom-based research. However, teachers' ability to conduct this research can vary based on individual factors such as their years of experience, educational background, and opportunities for professional development. Problem Number 4 seeks to explore whether there is a significant difference in teachers' competency levels in conducting classroom-based research when grouped according to their profiles, highlighting the potential influence of

demographic and professional factors on research capability. Understanding these differences can help identify gaps and inform targeted interventions to enhance teachers' research competencies.

Table 20.

The Significant Difference in the Teacher's Level of Competency in Conducting Classroom-based Research when Grouped According to Profile.

Teacher's Level of Competency in Conducting Classroom-based Research	Profile	Analysis of Variance			
		Critical	Computed	P-value	Interpretation
Research Concepts	Age	2.64	1.664	0.175	Not Significant
	Sex	3.87	6.773	0.010	Significant
	Education	2.40	1.224	0.301	Not Significant
	Years Teaching	2.40	1.366	0.246	Not Significant
Classroom Applications	Age	2.64	2.437	0.065	Not Significant
	Sex	3.87	8.594	0.004	Significant
	Education	2.40	2.075	0.083	Not Significant
	Years Teaching	2.40	1.798	0.129	Not Significant
Professional Growth	Age	2.64	3.493	0.029	Significant
	Sex	3.87	8.739	0.003	Significant
	Education	2.40	2.760	0.028	Significant
	Years Teaching	2.40	2.516	0.042	Significant
Student Impact	Age	2.64	5.680	0.001	Significant
	Sex	3.87	4.516	0.034	Significant
	Education	2.40	2.578	0.023	Significant
	Years Teaching	2.40	3.862	0.004	Significant
Research Barriers	Age	2.64	5.154	0.001	Significant
	Sex	3.87	5.663	0.018	Significant
	Education	2.40	3.775	0.005	Significant
	Years Teaching	2.40	3.504	0.008	Significant

Legend: F -test = ANOVA; α = level of significance = 0.05

The analysis presented in Table 20 examines significant differences in teachers' levels of competency in conducting classroom-based research across five dimensions—Research Concepts, Classroom

Applications, Professional Growth, Student Impact, and Research Barriers—when grouped according to their profiles (age, sex, education, and years of teaching). The only factor that shows a significant difference between male and female teachers in terms of Research Concepts is sex, with a computed F-value of 6.773 and a p-value of 0.010, indicating a difference in their competency levels. Meanwhile, age, education, and years of teaching do not have a significant impact on this area, as shown by their p-values of 0.175, 0.301, and 0.246, respectively. Similarly, in Classroom Applications, sex emerges as the only significant factor (computed F-value of 8.594 and p-value of 0.004), implying that gender plays a role in how teachers apply research concepts practically. At the same time, the other profiles remain statistically insignificant with p-values of 0.065, 0.083, and 0.129 for age, education, and years of teaching, respectively.

Significant differences in Professional Growth are observed across all demographic profiles: age ($F = 3.493$, $p = 0.029$), sex ($F = 8.739$, $p = 0.003$), education ($F = 2.760$, $p = 0.028$), and years of teaching ($F = 2.516$, $p = 0.042$). This highlights a strong connection between these factors and teachers' ability to use research for their career development. Similarly, when it comes to Student Impact, significant differences also appear across all profiles: age ($F = 5.680$, $p = 0.001$), sex ($F = 4.516$, $p = 0.034$), education ($F = 2.578$, $p = 0.023$), and years of teaching ($F = 3.862$, $p = 0.004$). This emphasizes how these demographic and professional factors broadly influence teachers' perception of research as a tool for enhancing student outcomes.

Research Barriers, which assess the challenges teachers encounter when conducting research, also show significant differences across all profiles: age ($F = 5.154$, $p = 0.001$), sex ($F = 5.663$, $p = 0.018$), education ($F = 3.775$, $p = 0.005$), and years of teaching ($F = 3.504$, $p = 0.008$). This highlights how these factors play a crucial role in shaping teachers' experiences with the obstacles they face in research.

Overall, the dimensions of Professional Growth, Student Impact, and Research Barriers demonstrate significant sensitivity to all profiles, highlighting their multidimensional nature. In contrast, Research Concepts and Classroom Applications show limited impact from these factors, with gender being the sole influential element. These findings suggest that interventions to improve teachers' research competencies should be tailored to specific profiles. Schools and educational institutions can use this analysis to design targeted programs that address competency gaps, reduce research barriers, and ultimately enhance teaching effectiveness and student outcomes.

Problem Number 6. Is there a significant difference in the extent to which teachers actively engage in classroom-based research when grouped according to their profile?

The focus of the study is to understand what demographic and professional variables might be associated with teachers' engagement in the different research work practices to help illuminate how and

why specific teacher characteristics are related to the extent to which teachers can utilize research to improve practice. This review provides a basis for creating interventions that support teachers in identifying and closing competency gaps and increasing their capacity to act as researchers in their classrooms.

Table 21.

The Significant Difference in the Extent to Which Teachers Actively Engage in Classroom-based Research When Grouped According to their Profile.

Teacher's Level of Competency in Conducting Classroom-based Research		Analysis of Variance			
	Profile	Critical	Computed	P-value	Interpretation
Willingness	Age	2.64	2.624	0.051	Not Significant
	Sex	3.87	4.808	0.029	Significant
	Education	2.40	2.081	0.083	Not Significant
	Years Teaching	2.40	2.290	0.060	Not Significant
Research Frequency	Age	2.64	1.401	0.243	Not Significant
	Sex	3.87	4.821	0.029	Significant
	Education	2.40	1.019	0.398	Not Significant
	Years Teaching	2.40	1.369	0.245	Not Significant
Collaboration	Age	2.64	1.452	0.228	Not Significant
	Sex	3.87	3.694	0.056	Not Significant
	Education	2.40	1.230	0.298	Not Significant
	Years Teaching	2.40	1.279	0.279	Not Significant
Research Integration	Age	2.64	1.130	0.337	Not Significant
	Sex	3.87	7.774	0.006	Significant
	Education	2.40	0.877	0.478	Not Significant
	Years Teaching	2.40	0.772	0.544	Not Significant
Research Motivation	Age	2.64	2.808	0.040	Significant
	Sex	3.87	2.427	0.120	Not Significant
	Education	2.40	2.099	0.081	Not Significant
	Years Teaching	2.40	2.748	0.029	Significant

Legend: F -test = ANOVA; α = level of significance = 0.05

Table 21 presents the results of an Analysis of Variance (ANOVA) examining whether teachers' involvement in classroom-based research varies significantly based on their age, sex, educational level, and years of teaching experience across five areas: willingness, research frequency, collaboration, research integration, and research motivation.

The results indicate that sex emerges as a significant factor influencing willingness ($p = 0.029$), research frequency ($p = 0.029$), and research integration ($p = 0.006$). This suggests that male and female teachers differ in how actively they engage in these areas of classroom-based research. Such differences could be influenced by varying motivational drivers, confidence levels, or professional priorities between genders, as noted by Eagly and Wood (2013), who found that gendered expectations can shape professional engagement patterns.

Age shows a significant relationship with research motivation ($p = 0.040$), indicating that teachers' drive to engage in research may increase or decrease with career stage. This aligns with Day and Gu (2010), who found that early-career teachers often display high enthusiasm but may lack research confidence, while more experienced teachers engage more strategically based on accumulated expertise.

Years of teaching experience also demonstrate a significant effect on research motivation ($p = 0.029$). This finding supports Huberman's (1993) career cycle theory, which posits that teachers' professional drive evolves, with mid-career educators often seeking opportunities to deepen practice through research.

On the other hand, educational attainment did not yield a significant difference in any domain ($p > 0.05$), suggesting that higher formal qualifications do not necessarily predict higher engagement in classroom-based research. This aligns with OECD (2020) findings that research engagement is more strongly influenced by institutional culture and support than by academic credentials alone.

Collaboration shows no significant differences across all demographic variables, indicating that cooperative research efforts are not influenced by age, sex, education, or teaching experience. This may reflect a shared professional culture in which collaboration is a standard expectation regardless of personal profile.

The findings imply that sex, age, and teaching experience are important considerations for designing targeted interventions to increase teacher engagement in research. Since sex significantly affects willingness, frequency, and integration, school leaders may consider gender-responsive professional development programs that address barriers and leverage strengths unique to each group. Age and experience effects on research motivation suggest the need for differentiated support, providing mentorship and skill-building for early-career teachers, and offering leadership or advanced research opportunities for experienced educators.

These findings highlight the importance of moving beyond “one-size-fits-all” approaches to research capacity building. As Fullan (2016) argues, professional learning must be adaptive to teachers’ personal and career contexts to maximize engagement and sustainability.

7. Is there a significant difference in the level of teachers' productivity when conducting classroom-based research grouped according to profile?

When teachers are grouped based on their profile factors (age, sex, education level, and years of teaching experience), the study seeks to ascertain whether there is a statistically significant mean difference in the level of their productivity in classroom research. It is crucial to gain insights into these contrasts to identify determinants that influence teachers' engagement in research and to provide specific support measures to increase their research productivity.

Table 22.

The Significant Difference in the Level of Teachers' Productivity When Conducting Classroom-based Research When Grouped According to their Profile.

Teacher's Level of Competency in Conducting Classroom-based Research	Profile	Analysis of Variance			
		Critical	Computed	P-value	Interpretation
Research Output	Age	2.64	2.612	0.052	Not Significant
	Sex	3.87	2.609	0.107	Not Significant
	Education	2.40	1.947	0.103	Not Significant
	Years Teaching	2.40	2.244	0.064	Not Significant
Presentation/ Publication	Age	2.64	3.266	0.022	Significant
	Sex	3.87	3.310	0.070	Not Significant
	Education	2.40	2.321	0.057	Not Significant
	Years Teaching	2.40	2.672	0.032	Significant
Teaching Improvements	Age	2.64	2.888	0.036	Significant
	Sex	3.87	1.397	0.238	Not Significant
	Education	2.40	2.122	0.078	Not Significant
	Years Teaching	2.40	2.480	0.044	Significant
Student Outcomes	Age	2.64	3.133	0.027	Significant
	Sex	3.87	1.970	0.161	Not Significant
	Education	2.40	2.229	0.066	Not Significant
	Years Teaching	2.40	2.930	0.021	Significant
Administrative Support	Age	2.64	2.574	0.054	Not Significant
	Sex	3.87	2.626	0.106	Not Significant
	Education	2.40	1.695	0.151	Not Significant
	Years Teaching	2.40	2.380	0.052	Not Significant

Legend: F -test = ANOVA; α = level of significance = 0.05

When teachers are grouped by age, sex, educational attainment, and years of teaching experience, Table 22 presents the results of an Analysis of Variance (ANOVA) examining whether there are significant

differences in their productivity across five indicators: research output, presentations/publications, teaching improvements, student outcomes, and administrative support. The findings reveal that age is a significant factor influencing presentation/publication ($p = 0.022$), teaching improvements ($p = 0.036$), and student outcomes ($p = 0.027$). This indicates that productivity in these areas varies across career stages. Consistent with Day and Gu (2010), younger teachers may demonstrate innovative approaches but require experience to refine dissemination and pedagogical improvements, while more experienced teachers leverage accumulated expertise to produce research with more substantial instructional and student impacts.

Years of teaching experience also significantly influenced presentation/publication ($p = 0.032$), teaching improvements ($p = 0.044$), and student outcomes ($p = 0.021$). This aligns with Huberman's (1993) career cycle theory, which posits that mid-to-late career educators often focus on deepening practice, sharing expertise, and mentoring others, activities closely linked to productivity in research application and dissemination.

In contrast, sex and educational attainment show no significant differences in any productivity indicator ($p > 0.05$), suggesting that gender and formal qualifications do not predict productivity levels in classroom-based research. This supports OECD (2020) findings that structural factors such as institutional culture and resource access often outweigh individual demographic characteristics in determining research productivity.

No significant differences were found in research output and administrative support across all profile variables, implying that these aspects of productivity are more uniformly distributed among teachers regardless of demographic background.

The results partially reject the null hypothesis, which stated that there are no significant differences in instructors' productivity based on their profiles. Significant differences exist for:

Age in presentation/publication, teaching improvements, and student outcomes.

Years of teaching experience in presentation/publication, teaching improvements, and student outcomes.

The null hypothesis is retained for all other profile-variable combinations, particularly for research output and administrative support, where no significant differences were detected.

The results underscore that career stage is a critical determinant of productivity in classroom-based research, particularly in translating findings into published work, refining teaching practices, and improving student outcomes. This suggests the need for career-stage-specific interventions such as targeted dissemination training for early-career teachers and leadership roles for experienced educators to mentor peers in research application.

The absence of significant differences based on sex and educational attainment highlights that equal opportunities for productivity exist across gender and qualification levels, provided that institutional support is available. This reinforces Fullan's (2016) assertion that professional growth is maximized when support systems adapt to teachers' developmental needs rather than demographic traits.

By strategically aligning research capacity-building initiatives with teachers' professional stages, school leaders can cultivate a culture where research productivity is sustained and equitably distributed, ultimately driving continuous improvement in teaching and learning.

8. Is there a significant relationship between teachers' competency in conducting classroom-based research and their productivity in conducting classroom-based research?

Classroom research is critical for improving teaching and learning, and engaging professional learning and outcomes. The power of teachers to engage in authentic research, participate in research action, and make a difference in the products of inquiry will be important contributors to developing a culture of research in schools. Research competence is synonymous with understanding, knowing how to do it, and being capable of developing and implementing studies correctly. Active engagement in a research program by teachers helps one understand the degree to which the teachers themselves are involved with the study process. At the same time, productivity indicates the extent to which tangible results, including published research results, presentations, and use of experimental outcomes.

Table 23.

The Significant Relationship Between Teachers' Competency in Conducting Classroom-based Research and Their Productivity in Conducting Classroom-based Research.

Teachers' competency in conducting Classroom-based research	Productivity in conducting Classroom-based research	r	p-value	Decision	Interpretation
Research Concepts	Research Output	0.629	0.000	Reject Ho	Significant
	Presentation/ Publications	0.644	0.000	Reject Ho	Significant
	Teaching	0.608	0.000	Reject Ho	Significant
	Improvements	0.495	0.000	Reject Ho	Significant
	Student Outcome	0.580	0.000	Reject Ho	Significant
	Administrative Support	0.623	0.000	Reject Ho	Significant
	Research Output	0.649	0.000	Reject Ho	Significant
	Presentation/	0.649	0.000	Reject Ho	Significant

Classroom Applications	Publications				
	Teaching	0.603	0.000	Reject Ho	Significant
	Improvements				
	Student Outcome	0.520	0.000	Reject Ho	Significant
Professional Growth	Administrative Support	0.570	0.000	Reject Ho	Significant
	Research	0.629	0.000	Reject Ho	Significant
	Output				
	Presentation/Publications	0.652	0.000	Reject Ho	Significant
Student Impact	Teaching	0.613	0.000	Reject Ho	Significant
	Improvements				
	Student Outcome	0.524	0.000	Reject Ho	Significant
	Administrative Support	0.592	0.000	Reject Ho	Significant
Research Barriers	Research	0.472	0.000	Reject Ho	Significant
	Output				
	Presentation/Publications	0.530	0.000	Reject Ho	Significant
	Teaching	0.449	0.000	Reject Ho	Significant
Research Barriers	Improvements				
	Student Outcome	0.326	0.000	Reject Ho	Significant
	Administrative Support	0.674	0.000	Reject Ho	Significant
	Research	0.472	0.000	Reject Ho	Significant
Research Barriers	Output				
	Presentation/Publications	0.532	0.000	Reject Ho	Significant
	Teaching	0.452	0.000	Reject Ho	Significant
	Improvements				
Research Barriers	Student Outcome	0.320	0.000	Reject Ho	Significant
	Administrative Support	0.683	0.000	Reject Ho	Significant

Table 23 presents the correlation results between teachers' competency in conducting classroom-based research and their productivity in terms of research output, presentation/publications, teaching improvements, student outcomes, and administrative support. According to the methodology, the null hypothesis (Ho) is rejected for each competency and productivity pair because all the calculated p-values are below 0.05. This indicates a statistically significant positive correlation between teachers' research competency and their productivity in conducting classroom-based research.

In terms of research concepts, the highest correlation is observed with presentation/publications ($r = 0.644$) and research output ($r = 0.629$), indicating that teachers who possess strong knowledge of research principles are more likely to produce quality outputs and disseminate findings through conferences or

journals. This supports the view of Creswell and Creswell (2018) that a deep understanding of research concepts enables educators to generate methodologically sound studies suitable for scholarly dissemination.

Classroom application competency also shows strong correlations with presentation/publications ($r = 0.649$) and research output ($r = 0.623$), underscoring that the ability to translate research into classroom strategies directly contributes to measurable productivity. This aligns with Borg's (2010) findings that the practical integration of research into daily teaching strengthens both the relevance and applicability of research findings, thereby enhancing productivity indicators.

Professional growth competency is most strongly associated with presentation/publications ($r = 0.652$), suggesting that teachers who continuously develop their professional skills tend to share and publish their research more frequently. According to Villegas-Reimers (2003), sustained professional growth fosters reflective practice, which is often documented and disseminated through formal channels.

For student impact competency, the highest correlation is with administrative support ($r = 0.674$), followed by presentation/publications ($r = 0.530$). This implies that teachers who can link their research to tangible student benefits are more likely to gain support from administrators, which in turn facilitates broader dissemination of findings. This is consistent with the work of Fullan (2016), who emphasizes that evidence of positive student impact often strengthens institutional backing for teacher-led research.

Interestingly, research barriers competency shows its strongest correlation with administrative support ($r = 0.683$), suggesting that teachers who can identify and address barriers to research are better positioned to secure logistical and institutional assistance. This resonates with the findings of Levin (2013), who notes that navigating research challenges requires both skill and institutional alignment, ultimately leading to increased productivity.

Implications of these findings are substantial. The consistent significance across all domains suggests that any enhancement in teachers' competency, whether in conceptual knowledge, classroom application, professional growth, focus on student impact, or overcoming barriers, can lead to measurable improvements in research productivity. This highlights the importance of comprehensive capacity-building initiatives that address both the theoretical and practical aspects of research. Higher competency leads to stronger research outputs, wider dissemination, improved teaching practices, and better student outcomes. Therefore, institutions should prioritize professional development, mentorship programs, and administrative support that actively encourage and sustain teachers' involvement in research.

Since the results are consistently significant ($p < 0.05$ in every case), the null hypothesis is rejected. Teachers' productivity across all measured dimensions is strongly and positively linked to their competency in

conducting classroom-based research, showing that higher competency directly leads to better research productivity.

9. Is there a significant relationship between teachers' competency in conducting classroom-based research and their engagement in research?

Table 24 presents the findings of a correlation analysis examining the relationship between teachers' willingness, research frequency, collaboration, research integration, and motivation with their level of engagement in classroom-based research. Competency was measured across five key dimensions: research concepts, classroom applications, professional growth, student impact, and research barriers.

Table 24.

The Significant Relationship Between Teachers' Competency in Conducting Classroom-based Research, and Their Engagement in Research

Teachers' competency in conducting Classroom-based research	Teacher's actively engage in classroom based research	r	p-value	Decision	Interpretation
Research Concepts	Willingness	0.704	0.000	Reject Ho	Significant
	Research	0.863	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.833	0.000	Reject Ho	Significant
	Research	0.779	0.000	Reject Ho	Significant
	Integration				
Classroom Applications	Research	0.664	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.681	0.000	Reject Ho	Significant
	Research	0.867	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.804	0.000	Reject Ho	Significant
Professional Growth	Research	0.752	0.000	Reject Ho	Significant
	Integration				
	Research	0.633	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.653	0.000	Reject Ho	Significant
	Research	0.899	0.000	Reject Ho	Significant
Student Impact	Frequency				
	Collaboration	0.836	0.000	Reject Ho	Significant
	Research	0.750	0.000	Reject Ho	Significant
	Integration				
	Research	0.629	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.631	0.000	Reject Ho	Significant
	Research	0.656	0.000	Reject Ho	Significant
	Frequency				

Research Barriers	Collaboration	0.596	0.000	Reject Ho	Significant
	Research	0.437	0.000	Reject Ho	Significant
	Integration				
	Research	0.471	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.644	0.000	Reject Ho	Significant
	Research	0.667	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.622	0.000	Reject Ho	Significant
	Research	0.454	0.000	Reject Ho	Significant
	Integration				
	Research	0.485	0.000	Reject Ho	Significant
	Motivation				

The correlation coefficients (r) range from 0.437 to 0.899, all of which are statistically significant at $p < 0.001$. These values indicate moderate to robust positive correlations between teachers' competencies and their engagement in classroom-based research. Notably:

Research Frequency shows the strongest associations, particularly under professional growth ($r = 0.899$), classroom applications ($r = 0.867$), and research concepts ($r = 0.863$), suggesting that highly competent teachers tend to conduct research more regularly.

Collaboration also shows consistently strong correlations across competency dimensions, with values as high as $r = 0.836$ under professional growth and $r = 0.833$ under research concepts, highlighting that competence enhances cooperative research efforts.

The weakest, though still significant, relationships occur between student impact and research integration ($r = 0.437$) and between research barriers and research integration ($r = 0.454$). This may suggest that while competencies in these areas support integration, external constraints or contextual factors may temper the relationship.

Since the p -values are all 0.000 across the dimensions, these relationships are statistically significant, leading to the consistent rejection of the null hypothesis (H_0). This means there is clear evidence that higher competency is strongly linked to higher engagement in classroom-based research.

These findings imply that teacher competency is a critical driver of active research engagement. Mastery of research concepts, ability to apply findings in the classroom, commitment to professional growth, focus on student impact, and skill in overcoming barriers are all positively associated with teachers' willingness, frequency, collaboration, integration, and motivation in research.

The strongest relationships with research frequency suggest that competence not only influences the decision to engage but also sustains ongoing participation in research activities. On the other hand, the relatively lower correlations for research integration under student impact and research barriers suggest that

even competent teachers may face systemic or contextual challenges that hinder the translation of research into practice, highlighting the need for institutional support, resource provision, and reduced structural barriers.

Since all domains show statistically significant correlations ($p < 0.05$), the null hypothesis—that there is no meaningful relationship between teachers' engagement in classroom-based research and their ability to conduct it—is consistently rejected.

School leaders and policymakers should prioritize capacity-building programs that enhance teachers' research competencies, as this directly correlates with increased engagement in research activities. Targeted professional development, mentorship, and collaborative networks can maximize this relationship, leading to more research-driven teaching practices and improved educational outcomes.

10. Is there a significant relationship between teachers' engagement in research and their productivity in conducting classroom-based research?

Research engagement, which reflects how actively instructors take part in scholarly activities, is a key factor in evaluating their productivity in classroom-based research. Productivity, on the other hand, pertains to the tangible outcomes and results of their research efforts, such as published work, implemented strategies, or innovative practices. Problem Number 9 seeks to explore whether a significant relationship exists between these two variables, aiming to uncover how the level of engagement contributes to the practical outputs of teachers' classroom-based research efforts and their overall professional growth.

Table 25 presents the correlation results between teachers' engagement in classroom-based research and their productivity across five productivity domains: research output, presentation/publications, teaching experience, student outcomes, and administrative support. The correlation coefficients (R) range from 0.483 to 0.916, all with p -values of 0.000, indicating statistically significant relationships at the 0.05 level

Table 25.

The Significant Relationship Between Teachers' Engagement in Research, and their Productivity in Conducting Classroom-based Research.

Teachers' engagement in conducting Classroom-based research	Teacher's actively engage in classroom based research	R	p-value	Decision	Interpretation
	Willingness	0.660	0.000	Reject Ho	Significant

Research Output	Research Frequency	0.624	0.000	Reject Ho	Significant
	Collaboration	0.554	0.000	Reject Ho	Significant
	Research	0.671	0.000	Reject Ho	Significant
	Integration				
	Research	0.916	0.000	Reject Ho	Significant
Presentation/ Publications	Motivation				
	Willingness	0.667	0.000	Reject Ho	Significant
	Research	0.704	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.656	0.000	Reject Ho	Significant
Teaching Experience	Research	0.722	0.000	Reject Ho	Significant
	Integration				
	Research	0.783	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.630	0.000	Reject Ho	Significant
Student Outcome	Research	0.605	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.527	0.000	Reject Ho	Significant
	Research	0.648	0.000	Reject Ho	Significant
	Integration				
Administrative	Research	0.901	0.000	Reject Ho	Significant
	Motivation				
	Willingness	0.556	0.000	Reject Ho	Significant
	Research	0.578	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.483	0.000	Reject Ho	Significant
	Research	0.664	0.000	Reject Ho	Significant
	Integration				
	Research	0.750	0.000	Reject Ho	Significant
	Motivation				
Administrative	Willingness	0.555	0.000	Reject Ho	Significant

Support	Research	0.612	0.000	Reject Ho	Significant
	Frequency				
	Collaboration	0.536	0.000	Reject Ho	Significant
	Research	0.539	0.000	Reject Ho	Significant
	Integration				
	Research	0.670	0.000	Reject Ho	Significant
	Motivation				

The results reveal consistently strong positive correlations between teacher engagement and productivity indicators. For instance, in the domain of research output, the highest relationship is observed between research motivation and productivity ($R = 0.916$), followed closely by research integration ($R = 0.671$) and willingness ($R = 0.660$). This pattern suggests that teachers who are more motivated and integrate research into their teaching produce more substantial research outputs.

In presentation/publications, research integration ($R = 0.722$) and motivation ($R = 0.783$) show robust correlations, implying that active research engagement directly contributes to the dissemination of findings and professional sharing.

Teaching experience as a productivity dimension shows similarly strong ties with research motivation ($R = 0.901$) and willingness ($R = 0.630$), indicating that engaged teachers tend to accumulate deeper and richer professional experiences that reinforce their teaching practice.

Student outcomes are also strongly associated with research motivation ($R = 0.750$) and research integration ($R = 0.664$), reinforcing the premise that teachers who actively engage in research adopt evidence-based practices that enhance learning performance and behavioral gains.

Finally, administrative support correlates positively with all engagement dimensions, especially research motivation ($R = 0.670$) and research frequency ($R = 0.612$). This demonstrates that when teachers are actively engaged, they are more likely to secure and utilize institutional support effectively.

All domains reject the null hypothesis (H_0), which claims there is no significant correlation between teachers' participation in classroom-based research and their productivity, since all p-values are below 0.05. This finding underscores a robust and consistent link: higher engagement leads to higher productivity in research output, dissemination, teaching quality, student outcomes, and utilization of administrative support.

These results have substantial implications for educational leadership and policy. First, the exceptionally high correlations for research motivation (up to $R = 0.916$) suggest that fostering intrinsic and extrinsic motivators should be a central focus of research capacity-building programs. Second, the consistent

significance across all domains implies that enhancing engagement is not only a matter of improving research skills but also of embedding research as a professional norm supported by institutional structures.

As echoed by Borg (2010) and Stenhouse (1975), teachers who adopt a researcher mindset are better positioned to innovate, adapt, and lead within their classrooms and institutions. Therefore, investment in sustained professional learning communities, mentoring systems, and recognition schemes can create a virtuous cycle where engagement drives productivity, and productivity reinforces engagement.

The null hypothesis is rejected in all cases, affirming a significant, positive relationship between teacher engagement in classroom-based research and productivity across multiple professional domains. This evidence strongly supports targeted interventions to deepen teacher engagement as a strategy for improving both research and educational outcomes.

11. Based on the results of the study, what retooling training program may be proposed?

Rationale

The quality of education is significantly shaped by teachers' capacity to integrate classroom-based research findings into their pedagogical practices, thereby enhancing student learning outcomes. However, the study revealed that educators often encounter barriers such as limited access to relevant resources, inadequate professional development aligned with their needs, and insufficient institutional support. These constraints hinder the translation of research into actionable teaching strategies, reduce opportunities for collaborative innovation, and weaken the culture of evidence-based practice in schools.

Addressing these gaps requires a holistic and responsive approach to professional learning. By implementing targeted training programs, fostering collaborative research platforms, and establishing sustained mentorship networks, schools can empower educators to conduct, interpret, and apply research with confidence. Such initiatives will not only strengthen teaching effectiveness but also promote innovation, inclusivity, and continuous professional growth within the educational community.

Project Title: *Empowering Educators: Strengthening Research Competencies Through Tailored Professional Development and Collaborative Platforms*

Summary of Findings

The study's conclusions, as determined by the data analysis and interpretation, are as follows:

1. First, a significant portion of respondents expressed limited confidence in their research skills, particularly in formulating research problems, applying statistical tools, and interpreting results. This

skill gap was closely linked to the absence of structured training and ongoing mentorship, confirming that professional capacity-building remains an urgent need.

2. Second, time constraints emerged as a significant barrier, with teachers citing heavy teaching loads, administrative tasks, and extracurricular responsibilities as impediments to dedicating sufficient time to research work. This finding underscores the critical need for workload management strategies to create an enabling environment for research engagement.
3. Third, limited access to research resources such as updated literature, reliable internet connectivity, and statistical software was consistently reported, further contributing to the reluctance to initiate classroom-based studies. Without adequate access to tools and references, teachers are unable to effectively design, implement, and complete their research.
4. Fourth, institutional support, while present in some schools, was perceived as inconsistent and often reactive rather than proactive. Respondents highlighted that recognition, incentives, and administrative encouragement were not uniformly applied, which diminished their motivation to pursue research activities.
5. Lastly, the data analysis revealed a strong relationship between these barriers and teachers' low participation in action research, supporting the hypothesis that skill limitations, time constraints, resource scarcity, and inconsistent institutional support significantly contribute to reluctance in conducting classroom-based studies.
6. These findings imply that addressing the problem requires a multifaceted approach, combining targeted professional development, resource provision, time allocation strategies, and consistent institutional backing. The results serve as a foundation for developing a structured Action Research Enhancement Training Program that systematically addresses each identified barrier, thereby fostering a stronger research culture in schools.

Conclusions:

The study's findings from the collected data led to the formulation of the following conclusions:

1. The study's results revealed a strong correlation between the identified parameters and the program's overall effectiveness, suggesting that improvements in these key areas can directly enhance the desired outcomes.
2. Respondents consistently perceived specific gaps, such as inadequate resources, limited training opportunities, and inconsistent implementation, as primary challenges affecting performance and sustainability.

3. The results confirmed the study's hypothesis that addressing the root causes identified in the analysis would lead to measurable improvements in the targeted performance indicators.
4. The data also highlighted that stakeholder involvement and continuous capacity building play a pivotal role in bridging existing gaps and fostering program efficiency.
5. Overall, the findings suggest the need for a structured, evidence-based intervention framework that directly responds to the specific issues identified in the research.

Recommendations

Based on the formulated conclusions, the following recommendations were formulated for the study:

1. Educational institutions should design training programs tailored to teachers' age, sex, and teaching experience, as these factors were found to significantly influence engagement in specific domains (willingness, research frequency, integration, and motivation). This ensures that both early-career and experienced educators, as well as male and female teachers, receive targeted capacity-building to close competency gaps and foster equitable participation in classroom-based research.
2. Since sex significantly affects willingness, frequency, and integration of research, schools should provide gender-responsive professional learning that addresses unique challenges and strengths for both male and female teachers. This can help balance research engagement levels across genders and promote inclusivity.
3. Consistent with findings showing that administrative backing has a strong correlation with research productivity, school leaders should provide adequate time, funding, mentorship, and access to resources to support teachers' research activities. Strengthening institutional support can sustain engagement and lead to more impactful outputs.
4. As collaboration was rated at a high level regardless of demographic profile, schools should capitalize on this by creating structured collaborative research projects and informal peer-sharing platforms. Leveraging this collective strength can drive innovation, knowledge-sharing, and improved integration of research findings into teaching.
5. Programs should emphasize helping teachers translate research findings into practical teaching strategies to improve classroom instruction directly. Given the strong correlation between research motivation and productivity, linking research activities to visible student outcome improvements can further inspire active participation.
6. Since both age and teaching experience were found to influence research motivation significantly, schools should develop career-stage-specific interventions. Mentoring for new teachers, leadership

roles for mid-career educators, and recognition opportunities for veterans to maintain high levels of engagement over time.

7. Institutions should reinforce the value of research by publicly recognizing research contributions and showing their impact on teaching quality and student success. This can enhance intrinsic motivation and sustain research involvement.

References

- Allen, A., Brown, T., & Hall, R. (2021). Fostering ongoing professional development through research output. *Journal of Educational Research*, 45(3), 231-240. <https://doi.org/10.1016/j.jeduc.2021.02.003>
- Anderson, S., & Lee, J. (2020). Research-driven teaching improvements: Promoting a culture of continuous professional development. *International Journal of Teaching and Learning*, 17(4), 412-421. <https://doi.org/10.1016/j.ijtl.2020.03.004>
- Bandura, A. (2021). Self-efficacy: The exercise of control. Freeman.
- Berger, R. (2021). Collaborative professional development and its impact on teacher growth. *Educational Leadership*, 78(5), 12-18.
- Black, P., & Wiliam, D. (2020). Research-based strategies for enhancing student achievement. *Assessment in Education: Principles, Policy & Practice*, 27(3), 197-211.
- Brown, A., & Hall, R. (2020). Research output and its influence on educational reform and policy. *Educational Leadership Review*, 48(2), 159-169. <https://doi.org/10.1080/17508965.2020.1810286>
- Carty, M., & Hail, J. (2020). Meeting the diverse needs of learners through research-based strategies. *Teaching and Learning Quarterly*, 34(1), 56-67. <https://doi.org/10.1108/0140917830181254>
- Carter, S., & Lee, C. (2021). Research-based practices and equity in education. *Journal of Education and Social Policy*, 38(1), 56-67.
- Cochran-Smith, M., & Lytle, S. L. (2021). Teacher research as a form of professional development. *Teachers College Record*, 123(5), 1-26.
- Collins, E., & Zhang, L. (2021). Developing communication skills through academic presentation and publication. *Journal of Education and Practice*, 22(2), 145-154. <https://doi.org/10.1016/j.jedupro.2021.03.012>
- Craig, E., & Nunes, L. (2020). The role of action research in fostering reflective practices in education. *Journal of Educational Research and Practice*, 12(3), 45-58.
- Cummings, S., & Koss, A. (2021). Systematic inquiry in teaching: A model for action research. *Teaching and Teacher Education*, 56(1), 26-36.
- Darby, A., & Stewart, K. (2021). Applying research-based practices in the classroom:

A pathway to improved teaching. *Teaching and Learning Review*, 18(2), 102-118.

Darling-Hammond, L. (2021). *The right to learn: A blueprint for creating schools that work*. Jossey-Bass.

Darling-Hammond, L., & Hyler, M. E. (2020). Creating the conditions for effective teacher learning. *Teaching and Teacher Education*, 99(1), 14-27.

Davis, C., Johnson, M., & Thomas, P. (2020). Evidence-based teaching and student engagement outcomes. *Journal of Educational Research and Practice*, 39(3), 310-322.
<https://doi.org/10.1177/215824401120417>

Day, C., & Gu, Q. (2020). Teacher professional development and student achievement. *International Journal of Educational Research*, 52(2), 91-106.

Duncan, J., & Bishop, A. (2020). Research in the classroom: Improving equity and student outcomes. *Journal of Educational Equity*, 19(2), 155-168.

Edwards, B., & Mitchell, S. (2021). Sustaining research careers in education through institutional support. *Journal of Teacher Development*, 53(4), 564-576.
<https://doi.org/10.1080/01426439.2021.1748499>

Garcia, D., & Wolff, J. (2020). The role of mentorship in teacher professional growth. *Journal of Teacher Development*, 41(3), 127-138.

Gonzalez, P., & Green, L. (2021). Research output and teacher self-efficacy: A closer look at the relationship. *Educational Psychology Review*, 33(2), 109-120. <https://doi.org/10.1007/s10648-021-09561-8>

Gonzalez, & Brown, T. (2021). The role of research in improving teaching practices and student outcomes. *Journal of Educational Effectiveness*, 19(5), 188-199.
<https://doi.org/10.1177/0950145320994157>

Hattie, J. (2020). *Visible learning for teachers: Maximizing impact on learning* (3rd ed.). Routledge.

Harris, S., Robinson, M., & Green, J. (2021). Motivation and job satisfaction through academic publishing. *Teacher Motivation and Satisfaction*, 41(3), 240-251. <https://doi.org/10.1007/s11636-021-00496-6>

Johnson, L., & Smith, C. (2021). Confidence in teaching: The impact of research-based practices. *Educational Psychology Review*, 33(1), 92-105.

Johnson, R., & Lee, J. (2021). Becoming leaders through research: The impact of academic publishing on teachers' professional trajectories. *Journal of Professional Development*, 17(6), 405-419. <https://doi.org/10.1177/2150140621105923>

- Johnson, R., & Thomas, S. (2021). Improving instructional delivery through research-informed practices. *Journal of Teacher Education*, 66(2), 205-215. <https://doi.org/10.1177/0022487121992129>
- Kagan, S. (2021). Creating adaptive teaching strategies through research-based insights. *Educational Leadership*, 79(4), 34-45.
- Katz, M., & Williams, S. (2020). Research publication as a career advancement strategy for teachers. *Teacher Education Quarterly*, 48(4), 430-440. <https://doi.org/10.3102/003465432197430>
- Kennedy, M. (2021). Continuous professional development through action research: Enhancing problem-solving abilities. *Journal of Professional Learning*, 15(4), 88-102.
- King, A., & O'Connor, P. (2021). Boosting academic credibility through presentation and publication. *Educational Leadership Quarterly*, 29(1), 85-97. <https://doi.org/10.1002/edq.347>
- Koshy, V. (2020). Action research in teaching: Practical insights for educators. *Education Journal*, 41(2), 90-102.
- Le Fevre, D., & Cameron, R. (2021). Improving classroom management through research-based practices. *Teaching and Teacher Education*, 55(1), 55-66.
- Marquez, J. (2021). Administrative support and its impact on teacher research productivity. *Journal of Educational Administration*, 58(2), 165-176. <https://doi.org/10.1108/AEA-03-2021-0119>
- McMahon, L., & O'Neill, T. (2020). Enhancing pedagogical knowledge through research. *Teaching and Teacher Education*, 57(1), 41-54.
- McNiff, J., & Whitehead, J. (2021). Action research: Principles and practices for teacher change. *Educational Action Research*, 29(1), 15-31.
- Mitchell, L., & Brown, P. (2021). Reflective practice in the context of research production. *Reflective Teacher*, 13(5), 134-146. <https://doi.org/10.1080/17712482.2021.1986539>
- Muijs, D., & Reynolds, D. (2020). The influence of teacher research on student performance. *Educational Researcher*, 49(4), 218-230.
- Ortega, A., & Paet, M. (2020). The importance of administrative support in fostering teacher research initiatives. *Education Research Review*, 15(3), 77-89. <https://doi.org/10.1080/20462995.2020.1756091>
- Peeters, M., & van der Sijde, J. (2021). Research in teaching: A pathway to student success. *Journal of Research in Education*, 14(2), 112-121.
- Parker, A., & Green, D. (2021). Publication and presentation as a means for influencing educational policy. *Policy and Practice in Education*, 38(4), 220-230. <https://doi.org/10.1080/23731613.2021.1857725>

Patel, S. (2021). Engaging students through research-based teaching strategies. *Journal of Education Research*, 15(1), 33-45.

Roberts, G., & James, K. (2020). The role of evidence-based practices in improving student outcomes. *Journal of Educational Research and Practice*, 37(2), 101-112.

Santoro, L., & Hargreaves, A. (2021). Using research to build professional trust in schools. *Educational Management Review*, 12(3), 56-68.

Schmidt, H., & Walker, T. (2020). Teacher autonomy in research-based teaching approaches. *International Journal of Education Research*, 18(2), 210-223.

Singh, G., & Sharma, V. (2021). Exploring teacher research for educational reform. *Journal of Education Policy*, 36(5), 1256-1268.

Smith, M., & Lee, A. (2021). Publishing research for educational improvement. *Educational Researcher*, 19(4), 99-110.

Sternberg, R. (2020). Research-driven teaching strategies for student success. *Research in Education*, 28(2), 101-115.

Thomas, S., & Phillips, R. (2021). Developing teachers' professional skills through research-based practices. *Professional Learning Review*, 16(5), 77-89.

Zhang, J., & Patel, S. (2021). Empowering teachers through research publication and presentation. *Teaching and Teacher Education*, 43(2), 45-56.