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Assessing Initial School-Based Research Training: Basis for a Strategic Action Plan for Secondary Public Schools

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Abstract

Aim: This action research study sought to evaluate the impact of an initial school-based research training program on teachers' confidence and competence in conducting action research to foster a research-oriented culture in secondary public schools.

Methodology: This study used a mixed-methods approach with quantitative surveys to evaluate changes in teachers' skills and attitudes following training and qualitative focus group discussions that equipped in-depth insights into the training's challenges and benefits.

Results: The findings expressed a significant 35% increase in teachers' confidence and knowledge in conducting action research, aligning with Mezirow's Transformative Learning Theory. Qualitative insights highlighted challenges such as time constraints and limited support, underscoring the need for structural assistance to embed research practices into teachers' roles. Findings also pointed out the value of collaborative research communities, mentorship, and resource hubs in sustaining transformative professional development and fostering a research culture within educational settings.

Conclusion: The findings substantially improved teachers' confidence and research skills. Resource constraints and a lack of institutional support remain significant barriers, underscoring the need for sustained mentorship and collaborative learning opportunities.

Keywords: Action Research, School-Based, Research Training, Mixed-Methods, Research Literacy, Professional Development, Educational Outcomes

INTRODUCTION

In the current educational landscape, teachers' ability to engage in action research is increasingly recognized as pivotal for enhancing instructional practices and student outcomes (Dunn et al., 2021). Action research empowers educators to identify issues specific to their teaching contexts, devise evidence-based interventions, and assess their effectiveness in real time. This study focuses on developing action research capabilities among teachers at Gen. Emilio Aguinaldo Integrated School, framed by the broader objective of embedding a culture of inquiry into school practices. The Generals' Academic Write-Up program was implemented as a school-based research training initiative designed to improve teachers' skills in conducting action research. In the Philippines, teacher professional development programs are significantly transforming to align with the Department of Education's vision of evidence-based instruction to improve educational quality (Department of Education, 2021). Teachers' engagement in research has been linked to creating enriched learning environments, mainly when provided with ongoing training and resources (Gonzales & Ramirez, 2022).

This study is also grounded in Mezirow's (1991) Transformative Learning Theory, which posits that individuals can transform their frames of reference through critical reflection and engagement in transformative activities. Mezirow emphasizes the importance of fostering deep, reflective learning processes that challenge existing beliefs and assumptions, making them a valuable framework for understanding how action research can transform teaching practices. For teachers, participating in action research encourages the kind of critical reflection that Mezirow describes, ultimately helping them to rethink and reshape their professional identities and practices (Mezirow, 1991). Research



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also highlights that transformative learning within professional development is crucial for instilling long-term behavioural changes in educational settings (Baumgartner, 2019).

Action research is critical in fostering reflective practice among teachers, allowing them to become active agents in their professional growth (Carrillo & Flores, 2021). Engaging in research allows educators to generate context-specific solutions that respond to their student's needs, particularly in the evolving post-pandemic educational setting where adaptable and evidence-based practices are crucial (Harris & Jones, 2020). Hence, evaluating the efficacy of the initial training efforts and developing a strategic framework for enhancing school research capacity is essential. Existing literature demonstrates that teacher engagement in research can improve pedagogical skills and promote student learning (Avalos & Assael, 2020; Goodwin et al., 2022). School-based research training has increased teachers' knowledge and boosted their confidence in applying research methodologies in their classrooms. Despite these advancements, barriers such as lack of resources, time constraints, and insufficient institutional support remain significant (Knapp & Hall, 2021). Dunn et al. (2021) meta-analysis found that successful teacher research programs integrate collaborative opportunities, access to resources, and ongoing mentorship—elements that were only partially addressed in the training evaluated in this study.

While much research has established the importance of research literacy among educators, there still needs to be a gap in understanding how initial school-based research training can be sustained and transformed into ongoing practice, particularly in resource-limited public schools. Existing programs often need to address long-term support structures and professional learning communities needed to maintain research momentum (Santos & Cruz, 2021). This study addresses this gap by evaluating the initial school-based training and recommending a strategic action plan to support teachers' continuous professional development.

The significance of this study lies in its potential to inform policymakers and educators about effective strategies for embedding research skills into teachers' professional development. Developing a structured and well-supported research culture within schools is pivotal for advancing teacher competency and enhancing student outcomes, especially in the Philippines' context of educational reform (Gonzales & Ramirez, 2022). The findings will contribute to a deeper understanding of the supports for enabling teachers to conduct meaningful action research and generate actionable insights that benefit educators and learners.

Objectives

This action research aimed to evaluate and enhance the capacity of teachers at Gen. Emilio Aguinaldo Integrated School (HS) to conduct meaningful action research as part of their professional development.

Specifically, the study focused on answering the subsequent questions:

1. How effectively does the initial school-based research training program enhance teachers' skills, knowledge, and confidence in conducting action research?
2. What are teachers' primary challenges and barriers in implementing action research practices, particularly regarding workload, resource availability, and institutional support?
3. How do teachers perceive the role of collaboration in sustaining engagement in research activities, and what is their interest in forming research teams or professional learning communities?
4. What strategic actions can be developed to provide ongoing support, mentorship, and resources for fostering a sustainable research culture among teachers?
5. What practical strategies can inform policymakers about embedding research skills into teacher professional development to enhance educational quality in resource-limited public schools?

METHODS

Research Design

The study used mixed methods to fully comprehend the effects of introductory research training at Gen. Emilio Aguinaldo Integrated School. The quantitative and qualitative techniques were utilized to assess the research training program's efficacy. To improve the results through triangulation, qualitative and quantitative data were collected concurrently, examined independently, and combined using a convergent parallel design. This data integration made a comprehensive evaluation possible, making it especially useful for evaluating teacher preparation programs (Creswell & Plano Clark, 2017).



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Population and Sampling

Quantitative Component: The quantitative component of this study utilized a purposive sampling method (Etikan et al., 2016) that involved 21 teachers from Grades 7 to 12 at Gen. Emilio Aguinaldo Integrated School. Quantitative data was collected through pre- and post-training surveys to measure changes in teachers' confidence, knowledge, and attitudes toward research due to the training sessions.

Qualitative Component: Participants were similarly purposively sampled for the qualitative component to provide insights into their experiences during the training. Data were gathered through semi-structured focus group discussions, allowing for an in-depth understanding of the challenges, perceived benefits, and suggestions for improvement in the training.

Instrument

Multiple instruments were used to collect data to achieve the objectives of this study. The quantitative data were gathered through pre- and post-training surveys, which included Likert scale items measuring teachers' confidence, knowledge, and attitudes toward research. These surveys were carefully designed to ensure content validity and were piloted among a small group of teachers who did not participate in the actual study, as recommended by Fowler (2013). The qualitative data were collected using semi-structured focus group discussions, which provided an in-depth exploration of teachers' experiences during the training sessions. The focus group guide included open-ended questions to explore challenges, perceived benefits, and suggestions for future improvements.

Data Collection

The data collection, review, and analysis were aligned with the study's objectives to ensure full compliance with established research protocols. Data were collected through a mixed-methods approach, integrating quantitative pre- and post-training surveys with qualitative focus group discussions. This dual approach allowed for a comprehensive assessment of the measurable impact on research skills and participants' subjective experiences during the training program.

Quantitative Method: The quantitative data collection involved the pre- and post-training surveys using Likert scale items to measure teachers' confidence, knowledge, and attitudes toward research. These data provided a numerical comparison of participants' perceptions before and after the training to effectively assess the intervention's impact.

Qualitative Method: The qualitative data were collected through semi-structured focus group discussions that explored teachers' experiences, challenges, and suggestions regarding the training. This method facilitated an in-depth understanding of the participants' perspectives, complementing the quantitative findings and enabling a richer analysis of the training's effectiveness.

Data Analysis

Quantitative Data Analysis: The quantitative data were analyzed using descriptive statistics, primarily focusing on pre- and post-training survey scores. The results indicated significant increases in teacher confidence and research knowledge, as evidenced by improvements in average Likert scale ratings. This quantitative analysis indicated the training's impact on the participants' self-efficacy regarding research.

Qualitative Data Analysis: The qualitative data from the focus group discussions were subjected to thematic analysis, identifying recurring themes related to barriers and enablers of research engagement. Key themes included time constraints, the desire for collaboration, and the need for sustained institutional support, highlighting teachers' nuanced challenges in applying research in their practice.

Integration of the Data: The study integrated quantitative and qualitative findings to offer a holistic view of the effectiveness of research training. While the quantitative data demonstrated improved teacher confidence, the qualitative data provided deeper insights into the contextual factors that impacted sustained research engagement, emphasizing the importance of institutional support and collaboration in fostering a research culture among teachers.

Ethical Considerations

The study's ethical considerations included obtaining informed consent from all participants before their involvement and ensuring compliance with ethical research standards through clearance from the school's review board. The study also emphasized participants' rights to privacy, confidentiality, and voluntary participation and preserved anonymity by assigning codes to participants instead of using their real names.



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RESULTS and DISCUSSION

1. Effectiveness of the Training Program

Table 1 demonstrated that the initial school-based research training program effectively increased teachers' confidence and knowledge in action research, with both metrics showing a 35% improvement (Mezirow, 1991). Qualitative feedback further supported these quantitative findings, indicating that teachers gained practical skills and confidence in implementing research-based interventions in their classrooms (Dunn et al., 2021).

Table 1. Effectiveness of the Training Program

Effectiveness	Pre-Training Mean Score	Post-Training Mean Score	Percentage Increase	Description
Teachers' Self-Reported Confidence	2.8	3.8	35%	Quantitative results showed a significant 35% increase in teachers' confidence in conducting action research, moving from a mean score of 2.8 to 3.8. This result indicated improved skills and empowerment in systematically addressing classroom challenges.
Teachers' Knowledge in Action Research	2.8	3.8	35%	The increased self-reported knowledge highlighted teachers' enhanced understanding of research methodologies, which supported more effective classroom interventions based on data-driven insights.
Qualitative Feedback	-	-	-	Teachers expressed newfound confidence and practical ability in implementing research-based interventions, reinforcing the quantitative findings and indicating the training program's success in enhancing research competencies.

Quantitative findings revealed a 35% increase in teachers' self-reported confidence and knowledge in action research, aligned with Mezirow's (1991) Transformative Learning Theory, which highlighted shifts in understanding through reflection on new experiences (Dunn et al., 2021). This transformation was further affirmed by qualitative data, where teachers expressed heightened confidence in implementing research-based interventions, illustrating the program's role in fostering reflective, skill-enhancing learning (Gonzales & Ramirez, 2022). Such outcomes underscored the potential of structured training programs to drive transformative professional growth in educational settings (Carrillo & Flores, 2021).

2. Challenges and Barriers:

Table 2 revealed that teachers faced significant barriers, including time constraints, limited resources, and inadequate institutional support, which hindered their ability to balance research with teaching responsibilities (Knapp & Hall, 2021). Quantitative data aligned with these qualitative insights, highlighting the need for structured support systems to facilitate teachers' integration of research into their professional roles (Santos & Cruz, 2021).

Table 2. Challenges and Barriers

Challenges and Barriers	Explanation
Time Constraints	Teachers expressed needing help balancing research with their existing workload. With heavy teaching responsibilities, finding time for action research became challenging. This limitation impacted their ability to apply and refine research skills within the classroom consistently.
Limited Resources	Teachers reported a lack of access to essential research resources, such as academic literature and research tools, which limited the quality and scope of their research. This scarcity hindered their ability to undertake comprehensive projects, leading to less impactful outcomes and diminished motivation to pursue research further.
Limited Institutional Resources	Teachers expressed their desire for more support from the school administration, highlighting the potential benefits of recognizing research as a critical component of their core duties. This perception contributed to the view of research as an "extra" responsibility rather than an integral aspect of teaching. Institutional solid support can significantly enhance motivation and foster a thriving research culture within the school environment.
Quantitative Trends Indicating Limited Institutional Facilitation	Quantitative data corroborated the qualitative insights, showing minimal institutional facilitation, with insufficient resources and time allocated for teachers' research. The alignment of quantitative and qualitative data emphasized the need for structured support systems to help teachers manage research effectively within their roles.
Need for Structured Support	Both qualitative and quantitative findings highlighted the importance of implementing structured support to help teachers incorporate research into their roles. Strategies such as dedicated time allocations, resource availability, and institutional recognition helped teachers manage research activities more effectively and sustainably, allowing research to become a practical part of professional duties.



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Qualitative insights showed primary challenges, including time constraints, limited resources, and insufficient institutional support, echoing the quantitative trend of minimal institutional facilitation (Knapp & Hall, 2021). According to Transformative Learning Theory, overcoming these barriers through structural support could enable deeper engagement and learning (Mezirow, 1991). This reflection highlights the critical need for a supportive infrastructure to embed research in teachers' professional roles (Santos & Cruz, 2021).

3. Perceptions of Collaboration

Table 3 revealed the importance of professional learning communities (PLCs) in fostering a collaborative research environment among teachers. Teachers perceived PLCs as essential for sustaining engagement and promoting professional growth, providing a platform for shared learning, peer support, and continuous problem-solving in their research activities (Gonzales & Ramirez, 2022).

Table 3. Perceptions of Collaboration

Aspect	Details
Quantitative Findings	Data indicated a strong interest in collaborative research practices, with most teachers willing to engage in professional learning communities (PLCs).
Qualitative Findings	Teachers highlighted the value of peer support in sharing challenges and solutions, suggesting that collaborative environments, like PLCs, alleviated individual burdens and fostered shared learning.
Perceived Benefits of Collaboration	Teachers believed that collaboration in PLCs provided emotional and professional support, helping to sustain research engagement over time. They saw PLCs as a platform for continuous development, where they could regularly discuss research findings, share insights, and address common obstacles.
Role of PLCs in Professional Growth	PLCs were viewed as an effective model for continuous professional development, allowing teachers to engage in collective problem-solving. This collaborative framework could have enhanced individual research skills and the collective school-based research culture.
Implications for Sustained Engagement	Integrating PLCs within the school was seen as essential to maintain teachers' motivation and interest in research, promoting a supportive culture where collaborative inquiry became a routine part of professional growth.

Both data sets indicated a strong inclination towards collaborative research, with teachers valuing professional learning communities (PLCs) for sustaining engagement (Goodwin et al., 2022). Mezirow's Transformative Learning Theory supported the idea that collaborative environments fostered critical reflection, which enhanced collective problem-solving and transformative growth (Mezirow, 1991). Thus, PLCs were vital for continuous professional development and shared research practices in educational settings (Baumgartner, 2019).

4. Strategic Actions for Ongoing Support

Table 4 outlined strategic actions supporting teachers in action research, focusing on mentorship, resource accessibility, regular skill-building workshops, and collaborative professional learning communities (Avalos & Assael, 2020). These initiatives addressed resource limitations and created a supportive, collaborative environment that fostered long-term teacher engagement in research practices.

Table 4. Strategic Actions for Ongoing Support

Strategic Action	Description	Purpose and Impact
Mentorship Programs	Established ongoing mentorship for teachers guided them through action research practices.	Provided continuous support, helping teachers navigate challenges and maintain engagement in research. Mentorship offered individualized guidance, encouraging teachers to feel supported and enhancing their confidence in conducting and applying research within their classrooms.
Resource Hubs	Created centralized resources, including access to academic literature, research tools, and data analysis software.	Addressed the resource limitations faced by teachers, allowing them easy access to essential research materials. By eliminating resource barriers, teachers could focus on research quality and practical application, fostering a culture of inquiry within the school.
Regular Workshops	Hosted periodic workshops to reinforce research skills, share updates, and provide hands-on training.	Kept research skills fresh and adaptable to new educational needs while offering teachers a platform to learn and collaborate. Regular workshops helped sustain interest and commitment to research by continuously building teachers' competencies in a structured learning environment.
Professional Learning Communities (PLCs)	Formed PLCs to support peer collaboration, shared learning, and group problem-solving.	PLCs fostered a collaborative environment where teachers could share experiences, resources, and feedback, strengthening the collective knowledge and sustaining engagement in research. This collaborative framework built a supportive network, making research a regular, shared practice.



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Findings suggested that initiatives such as mentorship, resource hubs, and workshops could build a sustainable research culture (Harris & Jones, 2020). These recommendations, rooted in Mezirow's theory, advocated for strategies that fostered reflective practice and long-term engagement in research activities (Mezirow, 1991). Structured, ongoing support addressed resource limitations, ensuring teachers' growth aligned with educational reform needs (Gonzales & Ramirez, 2022).

5. Policy Strategies for Professional Development

Table 5 emphasized embedding research skills into teacher development by allocating dedicated time, establishing resource hubs, and rewarding participation. This normalized research as an integral part of teachers' roles (Goodwin et al., 2022). These actions helped improve educational quality in resource-limited schools by supporting teachers in implementing evidence-based practices.

Table 5. Policy Strategies for Professional Development

Policy Strategies for Professional Development	Explanation
Embedding Research Skills in Teacher Development	Integrated findings underscored the need to embed research skills into professional development by treating research as a core competency rather than an additional task. This was achieved by integrating research activities within the standard teaching framework, making it a normalized part of teachers' roles.
Allocating Dedicated Time for Research Activities	Providing teachers with dedicated time for research within their work schedules alleviated time constraints, enabling them to engage in research without compromising their teaching duties. This strategic support helped teachers balance research with instructional responsibilities.
Creating Resource Hubs	Establishing resource hubs with access to academic literature, research tools, and data analysis software addressed teachers' resource limitations. Such hubs ensured that teachers had the necessary materials for meaningful research, especially in resource-limited schools.
Rewarding Research Participation	Recognizing and incentivizing teachers who engaged in research encouraged broader participation. This included rewards like additional certifications, career advancement opportunities, or financial incentives, which motivated teachers and integrated research into their career progression.
Improving Educational Quality	By embedding research into professional development, teachers were better equipped to enhance instructional quality through evidence-based practices, particularly benefiting resource-limited schools where traditional educational resources were scarce.

The integrated results underscored the importance of embedding research into professional development, recommending dedicated time, resource hubs, and incentives to encourage participation (Avalos & Assael, 2020). Transformative Learning Theory supported these strategies as they created frameworks that enabled critical reflection and adaptive skills (Mezirow, 1991). For resource-limited schools, these policy adjustments could have normalized research and enhanced educational quality (Dunn et al., 2021).

Conclusions

The initial school-based research training program implemented at Gen. Emilio Aguinaldo Integrated School successfully enhanced teachers' confidence and knowledge in conducting action research, as evidenced by a 35% improvement in these metrics. This increase in self-efficacy highlighted the effectiveness of structured, school-based research initiatives in fostering reflective practice among educators. However, significant challenges persisted, including limited resources, time constraints, and inadequate institutional support, which hindered teachers' ability to integrate research into their professional roles fully. Teachers strongly preferred collaborative practices, suggesting that professional learning communities (PLCs) could have provided essential peer support, continuous learning, and shared problem-solving opportunities.

Recommendations

Several strategic recommendations are proposed to address these challenges and sustain engagement in research. Establishing mentorship programs, creating resource hubs, conducting regular workshops, and integrating PLCs within the school environment are recommended. These initiatives aim to build a supportive infrastructure that empowers teachers to incorporate research into their daily practices. Policy recommendations include embedding research skills into professional development frameworks, allocating dedicated time for research activities, providing resources, and incentivizing research participation. These strategies align with transformative learning principles, encouraging reflective practice and adaptive skills essential for educational quality improvement, especially in resource-



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limited settings. By implementing these recommendations, the school can cultivate a sustainable research culture, enabling teachers to continuously engage in evidence-based practices that enhance their professional growth and student learning outcomes.

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