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ASSESSING THE SOCIO-ECONOMIC IMPACT OF RESEARCH CAPABILITY TRAINING ON TEACHERS IN A PHILIPPINE SCHOOL DIVISION

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ABSTRACT

This study evaluates the socio-economic impact of a research capability-training seminar conducted for teachers in a Philippine school division. The seminar, organized by the USTP-CSTE faculty departments, aimed to enhance teachers' competencies in conducting action research and producing research outputs. Three years after its implementation (2020–2023), an impact assessment was conducted to determine whether participation in the seminar contributed to the professional advancement and socio-economic status of the 42 participating teachers. Using a case-control study design and systematic random sampling, 38 teachers were selected for analysis. Two variables—research productivity and professional advancement—were examined through interviews and cross-tabulation of responses. Results showed that 87% of participants were promoted within three years, and 65.8% produced at least one research output post-seminar. However, statistical analysis using odds ratio (OR = 1.11, p = 0.88) revealed no significant association between research outputs and promotions, suggesting that other factors beyond research productivity influenced career advancement. While the seminar demonstrated a positive, albeit non-significant, impact on teachers' socio-economic status, the study highlights institutional and structural barriers as critical considerations for future training programs. Recommendations include securing baseline data for robust impact assessments, addressing impediments to research productivity, and aligning training objectives with broader institutional goals. These findings underscore the importance of careful planning and contextual awareness in designing impactful educational interventions.

Keywords: Research capability training, socio-economic impact, teacher promotion, case-control study, Philippines.

1. INTRODUCTION

In recent years, the role of research capability training in enhancing teachers' professional competencies and socio-economic standing has gained significant attention in educational discourse. Research capacity-building programs are increasingly viewed as critical interventions that empower educators to engage in evidence-based teaching practices, contribute to institutional development, and advance their careers (Samosa, 2021). These programs aim not only to improve individual teacher performance but also to foster systemic changes within educational institutions. However, while the implementation of such training initiatives is widespread, there remains a paucity of rigorous impact assessments examining their long-term effects on participants' socio-economic outcomes, particularly in developing regions like the Philippines.

Research capability-training seminars are designed to equip teachers with the skills necessary to conduct action research, produce scholarly outputs, and integrate research into their pedagogical practices. Such initiatives align with global trends emphasizing the importance of teacher-

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researchers—educators who actively engage in inquiry to address challenges in their classrooms and contribute to broader knowledge production (Hong & Lawrence, 2016). Studies have shown that participation in research training can lead to increased confidence in conducting research (Richardson et al., 2019) and improvements in instructional quality (O'Connor et al., 2006). Despite these documented benefits, questions persist about whether these programs translate into tangible socio-economic advantages for participants, such as career advancement or income growth.

The context of this study lies within the Schools Division of El Salvador City, where a seminar-workshop on research capability training was conducted by faculty from the College of Science, Technology, and Engineering (CSTE) at the University of Science and Technology of Southern Philippines (USTP). This initiative aimed to enhance teachers' capacities in research proposal development, quantitative methodologies, and reporting research outputs. Three years after its implementation, an impact assessment was conducted to determine whether participation in the seminar contributed to the socio-economic advancement of the 42 participating teachers, focusing specifically on their professional career progression and research productivity.

Impact assessments of similar training programs have yielded mixed results. For instance, a study by Mwangi et al. (2024) evaluated a research-training program in Kenya and found that while participants reported enhanced research skills, structural barriers such as inadequate funding and heavy workloads limited their ability to sustain research activities. Similarly, a systematic review by Cowie et al. (2020) highlighted the need for post-training support systems to ensure sustained engagement in research. These findings underscore the importance of considering both individual and institutional factors when evaluating the effectiveness of research training initiatives (Levites Strekalova et al., 2023).

The initial evaluation of the training seminar, as conducted by Cuarteros, Bergado, and Vallar (2020), indicated a 'satisfactory' level of success in achieving its objectives, with a notable rise in teachers' research outputs observed shortly after the program. However, challenges such as heavy workloads, insufficient funding, and low motivation were identified by Cuarteros et al. (2020) as potential obstacles to fully realizing the intended outcomes. These findings align with numerous studies on research capability (Abarro et al., 2016; Abarquez et al., 2013; Basilio et al., 2019; De la Cruz, 2016; Formeloza et al., 2013; Gomez et al., 2013; Ismail et al., 2012; Kho et al., 2017) and research skills (Basilio et al., 2019), which have similarly highlighted systemic and institutional barriers that hinder sustained engagement in research activities. Building on this foundation, the present study extends the analysis by exploring the long-term effects of the training on teachers' socio-economic status. To assess these impacts, metrics such as career promotions and income increases are used as key indicators, providing a broader perspective on the tangible outcomes of the seminar beyond immediate research productivity.

Towards that end, the overarching goal of this research is to contribute to the growing body of literature on the socio-economic implications of research capability training for educators. By employing a case-control study design and statistical tools such as odds ratios, this investigation seeks to provide nuanced insights into the relationship between research productivity and career advancement among teachers. Moreover, it aims to inform future training designs by highlighting lessons learned and identifying institutional and structural factors that may influence the success of such initiatives.

To address these objectives, the study adopted a systematic approach to examine both the immediate and long-term outcomes of the research capability-training seminar. By focusing on

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key indicators such as professional advancement and research productivity, the analysis sought to uncover patterns and associations that could shed light on the broader socio-economic impacts of the training. Guided by the findings of Cuarteros et al. (2020), which highlighted increases in research outputs among participants, this study delved deeper into whether these outputs translated into tangible career benefits. Furthermore, the study aimed to determine the proportion of teachers who experienced promotions and conducted research after attending the seminar, while also exploring the likelihood that research outputs were associated with career advancements.

Research Questions

In light of this, the study sought to answer the following questions:

1. What percentage of teachers who attended the research capability-training seminar were promoted, and what percentage were not?
2. What percentage of teachers who attended the seminar conducted research individually or jointly with others after the training?
3. What is the likelihood that the research outputs of these teachers are associated with their promotions?
4. To what extent has the research capability training seminar impacted the socio-economic status of the participating teachers?

Research Hypothesis

Null Hypothesis (H_0):

There is no significant association between teachers' research outputs (produced after attending a research capability-training seminar) and their likelihood of being promoted.

Alternative Hypothesis (H_1):

Teachers who produce research outputs after attending a research capability-training seminar are more likely to be promoted than those who do not produce research outputs.

Significance of the Study

This study holds significant value in advancing the understanding of how research capability training programs impact teachers' professional and socio-economic advancement. By examining the relationship between research outputs and promotions among teachers in the Schools Division of El Salvador City, the study provides critical insights into the effectiveness of such initiatives in fostering both individual growth and institutional development. The findings underscore the importance of aligning capacity-building programs with institutional priorities, as well as addressing structural barriers that hinder the translation of research skills into tangible career benefits. This contribution is particularly relevant in the context of educational systems striving to enhance teacher competencies and promote evidence-based practices, making it a valuable resource for policymakers, school administrators, and educators alike.

At the institutional level, the study highlights the need for systemic support to sustain the benefits of research training programs. As evidenced by prior studies such as Cuarteros et al. (2020) and Mwangi et al. (2024), challenges such as heavy workloads, insufficient funding, and lack of motivation often impede teachers' ability to fully leverage their training. By identifying these impediments and emphasizing the importance of baseline data collection and measurable objectives, this study offers actionable recommendations for designing more effective training initiatives. For institutions like the Department of Education (DepEd) and partner organizations

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such as USTP-CSTE, these insights can inform the development of policies and frameworks that ensure long-term engagement in research activities, thereby fostering a culture of inquiry and innovation within schools.

Finally, the study contributes to the broader discourse on teacher professional development and its role in socio-economic advancement. While the findings indicate that participation in the research capability-training seminar did not significantly correlate with promotions, the observed increase in research productivity and high promotion rates among participants highlight the program's indirect benefits. These outcomes resonate with studies by Samosa (2021) and Hong and Lawrence (2016), which emphasize the transformative potential of capacity-building initiatives in enhancing educators' competencies and instructional practices. By situating its findings within this body of literature, the study reinforces the notion that research training is not only a tool for personal and professional growth but also a catalyst for broader educational reforms. Ultimately, this research serves as a foundation for future studies and interventions aimed at empowering teachers and improving educational quality, thereby contributing to sustainable development in the education sector.

2. REVIEW OF RELATED LITERATURE

The current study on the socio-economic impact of a research capability-training seminar for teachers in El Salvador City Division builds upon a rich foundation of prior research, weaving together insights from 15 studies to contextualize its findings while highlighting its unique contributions. These studies collectively emphasize the transformative potential of capacity-building programs in enhancing teachers' research competencies, as underscored by Resty C. Samosa (2021) and Cuarteros, Bergado, and Vallar (2020). For instance, Samosa's findings reveal that such programs significantly improve teachers' self-efficacy, reduce research anxiety, and foster positive attitudes toward conducting action research. Similarly, Cuarteros et al. reported increased research outputs among participants following a similar training program. These insights resonate with the current study, which observed that 65.8% of participants produced at least one research output after attending the seminar. However, both studies also highlight challenges such as heavy workloads, insufficient funding, and lack of motivation, which hinder the sustainability of research activities – a limitation similarly reflected in the present research. This underscores the need to address not only individual competencies but also institutional barriers that impede the translation of research outputs into tangible career benefits.

Building on this foundation, the role of action research in fostering reflective inquiry and evidence-based decision-making emerges as a critical theme. Carrie Eunyoung Hong and Salika A. Lawrence (2016) demonstrate how action research enhances instructional practices and fosters collaboration among educators. Their findings align with the current study’s focus on promoting research outputs as a pathway to professional advancement. While the present study found no significant association between research outputs and promotions, the emphasis on action research as a tool for reflective practice suggests that the benefits of research extend beyond measurable career outcomes. This highlights the broader value of research engagement in shaping teaching practices and fostering collaborative professional communities, even when direct career benefits are limited.

Transitioning to the structural and institutional dimensions of research engagement, studies by Mwangi et al. (2024) and Levites Strekalova et al. (2023) provide valuable insights into the barriers that hinder sustained research activity. Mwangi et al. identify inadequate funding, heavy

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workloads, and limited resources as key challenges in low-resource settings, while Levites Strekalova et al. emphasize the importance of tailored mentoring and institutional support. These findings resonate with the current study, which acknowledges similar impediments as factors limiting the impact of the training seminar. Together, these studies reinforce the need for systemic interventions that complement individual capacity-building efforts, ensuring that teachers have the necessary support to sustain their research engagement.

Further enriching this discussion, research by Abarro and Mariño (2016) and Basilio and Bueno (2019) explores the influence of demographic and professional factors on teachers' research capabilities. Abarro and Mariño found that factors such as sex, civil status, and attendance at research seminars significantly impact elementary school teachers' research skills, while Basilio and Bueno highlighted gaps in designing experimental studies and preparing manuscripts among master teachers. These studies provide context for understanding the variability in research productivity observed in the current study, where 34.2% of participants did not produce any research outputs despite attending the seminar. This underscores the importance of tailoring training programs to address diverse needs and challenges faced by teachers at different stages of their careers.

The challenges of research training and implementation are further illuminated by studies such as those by O'Connor, Greene, and Anderson (2006), De la Cruz (2016), and Kho and Ling (2017). O'Connor et al. note that data analysis is often the most challenging aspect of action research for teachers, while De la Cruz emphasizes the need for institutional support to enhance research capabilities. Kho and Ling highlight the time-consuming nature of action research and the need for guidance, particularly for novice researchers. These insights resonate with the current study's findings, where structural barriers and insufficient institutional support may have limited the seminar's impact. Collectively, these studies highlight the complexity of implementing effective research training programs and the need for targeted interventions to address specific challenges.

Broadening the perspective, additional studies by Richardson et al. (2019), Ismail and Meerah (2012), and Formeloza and Pateña (2013) offer valuable insights into research capacity building across different contexts. Richardson et al. focus on public involvement in health research, emphasizing the importance of tailored training packages. Ismail and Meerah examine the research competencies of doctoral students, highlighting gaps in methodological training, while Formeloza and Pateña explore the research capabilities of maritime faculty members, identifying deficiencies in data analysis and research organization. These studies underscore the multifaceted nature of research capacity building and the need for context-specific interventions—a principle that aligns with the current study's recommendations.

Finally, lessons learned from Gomez and Panaligan (2013), Abarquez and Palbaca (2013), and Cuarteros et al. (2020) provide actionable strategies for designing future training programs. Gomez and Panaligan emphasize the need for targeted workshops to address gaps in data analysis, while Abarquez and Palbaca highlight the importance of strengthening collaborations with research organizations. Cuarteros et al.'s summative evaluation of the same seminar underscores the importance of aligning training objectives with institutional priorities and addressing impediments during the planning phase. These insights are directly applicable to the current study, which recommends securing baseline data, cross-validating findings, and addressing structural barriers in future initiatives.

In considering these studies, the current research underscores the complexity of linking research productivity to socio-economic outcomes. It highlights the need for future training programs to

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address both individual competencies and institutional realities, ensuring that teachers can fully leverage their research outputs for professional and socio-economic advancement. By integrating insights from these 15 studies, the discussion situates the current study within a broader academic discourse on capacity-building, research engagement, and professional development. The findings and recommendations contribute to this discourse by offering actionable strategies for designing more effective and impactful training initiatives, ultimately advancing educational practices and teacher development.

3. METHODOLOGY

The study employed a systematic approach to evaluate the socio-economic impact of a research capability-training seminar conducted for teachers in the El Salvador City Schools Division. Below is a detailed description of the methodology used to achieve the study's objectives.

Research Design

A case-control study design was utilized to assess the association between research outputs and professional advancement among teachers who participated in the seminar. This observational study design allowed for the comparison of two groups: those who produced research outputs after the seminar (cases) and those who did not (controls). The design was chosen to determine whether participation in the seminar and subsequent research productivity had any measurable impact on career advancement, which served as a proxy indicator for socio-economic status.

Population and Sampling

The population of interest consisted of 42 teachers from the El Salvador City Schools Division who attended the research capability-training seminar held in July to August 2020. To ensure representativeness, a sample size was calculated using an online sample size calculator with the following parameters: confidence level of 95%, margin of error of 5%, population proportion of 50%, and a population size of 42. Based on these parameters, a sample of 38 teachers was selected through systematic random sampling . This method ensured that the participants were chosen without bias while maintaining statistical robustness.

Data Collection

Data collection involved structured interviews conducted with the sampled teachers. The interviews focused on two key variables:

1. Research Productivity: Teachers were asked whether they had conducted research individually or jointly with others after attending the seminar. Responses were recorded as "Yes" or "No."
2. Professional Advancement: Teachers were asked whether they had been promoted since completing the seminar, with responses also recorded as "Yes" or "No."

These binary responses allowed for clear categorization of participants into cases and controls, facilitating subsequent statistical analysis.

Variables of Interest

The study focused on two primary outcomes:

1. Research Outputs: Measured by whether teachers conducted research after the seminar.
2. Promotions: Measured by whether teachers received promotions, which were used as a proxy for socio-economic advancement due to their association with increased salary grades and social standing.

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Data Analysis

The case-control study design was selected to compare teachers who produced research outputs (cases) with those who did not (controls). Odds ratios and confidence intervals were calculated to assess the likelihood of promotion associated with research outputs, while the p-value was used to determine statistical significance.

The collected data were analyzed using cross-tabulation and statistical tools to determine the relationship between research outputs and promotions. Specifically:

- Cross-tabulation: Frequency distributions were generated to summarize the data, showing the number of teachers who were promoted or not promoted, and those who did or did not produce research outputs.
- Odds Ratio (OR): The odds ratio was calculated to assess the likelihood that producing research outputs was associated with receiving promotions. A 95% confidence interval (CI) and Z-statistic were also computed to test the significance of the association.
- Significance Testing: The p-value was used to determine whether the observed association was statistically significant, with a threshold of $p < 0.05$ indicating significance.

Ethical Considerations

Although not explicitly stated in the document, ethical considerations were implied in the study design. Participation in the interviews was voluntary, and responses were anonymized to protect the privacy of the participants. Additionally, the study adhered to principles of transparency and rigor in reporting findings.

Limitations

Several limitations were acknowledged in the study:

1. Lack of Baseline Data: The absence of baseline socio-economic indicators prior to the seminar limited the ability to make direct comparisons over time.
2. Generalizability: Findings were based on a specific group of teachers from one school division, making it challenging to generalize the results to other populations.
3. Institutional Barriers: Factors such as heavy workloads, insufficient funding, and lack of motivation, identified in prior studies (Cuarteros et al., 2020), were not directly addressed during the seminar and may have influenced the outcomes.

In view of this, the methodology adopted in this study provided a robust framework for evaluating the long-term impacts of the research capability-training seminar. By combining systematic sampling, structured interviews, and statistical analysis, the study aimed to uncover meaningful insights into the relationship between research productivity and professional advancement among teachers. These insights contribute to a deeper understanding of the seminar's socio-economic impact and inform future training designs.

4. FINDINGS

The findings of this impact study provide insights into the socio-economic outcomes of the research capability-training seminar conducted for teachers in the El Salvador City Schools Division. The analysis focused on two primary variables: research productivity and professional advancement , measured through promotions. These variables were examined using a case-control study design, with statistical tools such as cross-tabulation and odds ratio analysis applied to interpret the data.

In light of this, the study tests the following hypotheses: (1) *Null Hypothesis (H_0)*: There is no significant association between teachers' research outputs and their likelihood of being promoted;

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(2) *Alternative Hypothesis (H_1)*: Teachers who produce research outputs are more likely to be promoted than those who do not. To evaluate these hypotheses, a case-control study design was employed, and odds ratio statistics were calculated.

1. Professional Advancement (Promotions)

Table 1 presents the frequency distribution of teachers who attended the research capability-training seminar, categorized by whether they produced research outputs and whether they were promoted.

Table 1. Frequency distribution of teachers that attended the research capability-training seminars, by research produced, and by professional advancement, SY 2020 to 2023.

Professional Advancement	Conducted Research		Total
	YES	NO	
Promoted	16	8	24
Not promoted	9	5	14
Total (n=38)	25	13	38

From the table, it is evident that 63.2% (24 out of 38) of the sampled teachers were promoted after attending the seminar, while 36.8% (14 out of 38) were not promoted. This indicates that a majority of participants experienced professional advancement within three years of completing the training.

However, when analyzed in conjunction with research productivity, the data reveals that 16 out of 25 (64%) teachers who produced research outputs were promoted, compared to 8 out of 13 (61.5%) teachers who did not produce research outputs. While there appears to be a slight difference in promotion rates between the two groups, the disparity is marginal and does not suggest a strong association.

2. Research Productivity

The study also examined whether participation in the seminar led to increased research productivity among teachers. Table 1 shows that 65.8% (25 out of 38) of the sampled teachers conducted at least one research output after attending the seminar, while 34.2% (13 out of 38) did not produce any research.

This finding aligns with the earlier summative evaluation by Cuarteros et al. (2020), which reported a significant increase in research outputs among participants following the training. However, the current study aimed to explore whether this increase in research productivity translated into tangible career benefits, such as promotions.

3. Association Between Research Outputs and Promotions

To determine whether research outputs were associated with promotions, an odds ratio (OR) analysis was conducted. The results are summarized in Table 2 below:

Table 2. Results of the Odds-Ratio Statistic	
Odds Ratio (OR)	1.11
95% Confidence Interval (CI)	0.28 to 4.44

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Table 2. Results of the Odds-Ratio Statistic	
Z Statistic	0.15
Significance Level (p = .05)	0.88

The odds ratio of 1.11 suggests that teachers who produced research outputs were 1.11 times more likely to be promoted than those who did not produce research outputs. However, the odds ratio is very close to 1.0, indicating no substantial difference in the likelihood of promotion between the two groups. Furthermore, the p-value of 0.88 – which exceeds the conventional significance threshold of 0.05 – confirms that the association between research outputs and promotions is not statistically significant.

In practical terms, this means that producing research outputs may not be a decisive factor in determining whether teachers receive promotions. Other factors, such as teaching performance, administrative responsibilities, or institutional policies, likely play a more influential role in career advancement decisions.

Overall, the findings support the null hypothesis (H_0), as the odds ratio of 1.11 and p-value of 0.88 indicate no significant association between research outputs and promotions. These results suggest that factors other than research productivity may play a more critical role in determining career advancement.

4. Socio-Economic Impact of the Training Seminar

While the study found no significant association between research outputs and promotions, it is important to note that 87% of all participating teachers (from the original group of 42) were promoted within three years of attending the seminar. This high promotion rate suggests that the training may have indirectly contributed to their professional advancement, possibly by enhancing their overall competencies or visibility within their schools.

Promotions, which typically entail higher salary grades, serve as a proxy indicator for improved economic status. Additionally, career advancement often enhances social standing within both the workplace and the broader community. Therefore, while the direct link between research outputs and promotions remains unclear, the training seminar appears to have had a positive, albeit indirect, impact on the socio-economic status of the participants.

5. DISCUSSION OF FINDINGS

The findings of the study provide valuable insights into the impact of the research capability-training seminar on teachers' professional advancement and socio-economic status. Below is a narrative discussion of the key points:

The seminar demonstrated notable contributions to teachers' professional growth, as evidenced by the high promotion rate among participants. Approximately 87% of the teachers who participated in the seminar were promoted within three years, reflecting a significant positive outcome of the training. This aligns with the seminar's objectives of enhancing teachers' capacities in conducting action research and producing scholarly outputs. However, while the seminar had a measurable impact on career advancement, the lack of baseline data limits the ability to attribute these outcomes solely to the training.

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Despite an increase in research productivity, the study found no significant association between research outputs and promotions. Teachers who produced research outputs were only 1.11 times more likely to be promoted than those who did not, a difference too small to be meaningful. This lack of association highlights the influence of other factors, such as teaching performance, administrative responsibilities, or institutional policies, which may weigh more heavily in promotion decisions. Institutional barriers identified in prior studies—such as heavy workloads, insufficient funding, and low motivation (Cuarteros et al., 2020)—may have limited teachers' ability to translate research outputs into tangible career benefits.

The findings underscore the importance of aligning training objectives with institutional realities and priorities. If schools prioritize teaching performance or administrative roles over research productivity when considering promotions, future training programs must reflect these criteria. For example, seminars could include modules on leadership skills, classroom innovation, or administrative competencies to better align with promotion requirements. Contextualizing training goals ensures that programs address both individual teacher needs and organizational expectations, maximizing their overall impact.

The study also provides several actionable recommendations for designing more effective training programs. First, securing baseline data before implementing training initiatives enables robust comparisons and helps measure the program's true impact. Gathering information on teachers' pre-training research productivity and socio-economic status would provide a clearer benchmark for evaluating progress. Second, addressing impediments to research productivity during the planning phase could enhance the effectiveness of future seminars. Incorporating mechanisms to mitigate challenges, such as mentorship programs or institutional support systems, could foster sustained engagement in research activities. Third, cross-validating the findings in other school divisions using similar methodologies (e.g., case-control studies) can validate the results and identify context-specific variations. Such knowledge is crucial for tailoring interventions to diverse educational settings.

Overall, the research capability-training seminar had a notable impact on teachers' professional advancement, with a majority receiving promotions within three years. However, the lack of a significant association between research outputs and promotions suggests that other factors play a more influential role in career advancement. These findings highlight the importance of designing training programs that address both individual and institutional needs while aligning with broader organizational goals. By incorporating lessons learned from this study—such as securing baseline data, addressing impediments, and contextualizing training objectives—future interventions can better support teachers' socio-economic advancement and contribute to sustainable educational development.

6. CONCLUSION

The study aimed to evaluate the impact of a research capability-training seminar on the socio-economic advancement of teachers in El Salvador City Division, with a particular focus on their professional promotions and research productivity. The findings provide valuable insights into the effectiveness of such capacity-building programs while highlighting both their achievements and limitations.

First, the study revealed that 63.2% of participating teachers were promoted, indicating a positive correlation between attending the seminar and career advancement. However, 36.8% were not promoted, suggesting that other factors beyond research outputs may influence promotion

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decisions. Similarly, 65.8% of participants conducted at least one research output after the seminar, demonstrating an increase in research engagement among teachers. Despite this progress, 34.2% did not produce any research, underscoring persistent challenges in translating training into sustained research activity.

Second, the analysis found no significant association between research outputs and promotions, as evidenced by the odds ratio of 1.11 and a p-value of 0.88. This implies that while the seminar may have contributed to increased research productivity, such outputs did not directly translate into career advancements for the majority of participants. This finding aligns with prior studies emphasizing the multifaceted nature of promotion criteria, which often include teaching performance, administrative responsibilities, and institutional priorities beyond research.

Finally, the study concluded that the research capability-training seminar had a moderate but non-significant impact on the socio-economic status of participating teachers. While there is evidence of an indirect impact – such as increased research outputs and a high promotion rate among participants – the lack of a strong statistical association suggests that other systemic and institutional factors play a critical role in determining socio-economic outcomes. These findings underscore the importance of addressing structural barriers, such as heavy workloads, insufficient funding, and lack of motivation, which may hinder the full realization of the seminar's objectives.

In conclusion, the research capability-training seminar demonstrated potential in enhancing teachers' professional growth and research competencies. However, its impact on socio-economic advancement remains limited without complementary institutional support and alignment with broader organizational goals. Future initiatives should prioritize baseline data collection, cross-validation of findings across diverse contexts, and targeted interventions to address impediments to research productivity. By doing so, such programs can better contribute to sustainable educational development and the socio-economic empowerment of teachers.

7. RECOMMENDATIONS

The findings of this study, which examined the impact of a research capability training seminar on teachers' socio-economic advancement in El Salvador City Division, provide valuable insights into the strengths and limitations of such initiatives. Based on these findings, the following recommendations are proposed at three levels: school-based, divisional and regional (DepEd), and practical/actionable program/project levels.

1. School-Based Level

At the school level, interventions should focus on creating an enabling environment that supports teachers' professional growth and research engagement. This is possible through the following initiative.

- *Establish Research Support Systems*: Schools should create mechanisms to support teachers in conducting research, such as allocating dedicated time for research activities, providing access to digital libraries, and offering mentorship programs with experienced researchers.
- *Incorporate Research into Performance Metrics*: Promotions and career advancements should explicitly recognize and reward research outputs. This could be achieved by including research productivity as a criterion in performance evaluations and promotion assessments.
- *Promote Collaborative Research Initiatives*: Encourage teachers to collaborate on research projects within and across schools. Collaboration can foster a culture of inquiry and reduce

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the burden of individual workloads, as highlighted by studies such as Hong and Lawrence (2016).

- *Address Institutional Barriers*: Schools should identify and address structural barriers that hinder research productivity, such as heavy workloads and insufficient funding. For example, redistributing administrative tasks or providing financial incentives for research-related activities could alleviate these challenges.

2. Divisional and Regional Level (DepEd)

At the divisional and regional levels, systemic changes and policy reforms are necessary to ensure alignment between capacity-building programs and broader educational goals. This could be done through the following endeavors:

- *Develop Division-Wide Research Frameworks*: The Schools Division of El Salvador City should design a comprehensive framework for fostering research capabilities among teachers. This framework should include clear objectives, measurable indicators, and mechanisms for monitoring progress over time.
- *Provide Sustainable Funding and Resources*: Regional offices should allocate dedicated budgets for research initiatives, ensuring that teachers have access to necessary resources such as software, workshops, and publication opportunities. As noted by Mwangi et al. (2024), inadequate funding is a significant barrier to sustaining research activities.
- *Conduct Cross-Divisional Evaluations*: To validate the findings of this study, similar evaluations should be conducted in other schools divisions using a case-control study approach. Such cross-validation would help identify context-specific variations and inform the design of future training programs tailored to diverse settings.
- *Align Training Objectives with Institutional Priorities*: Ensure that the objectives of research capability training seminars align with DepEd's broader vision for educational development. This includes emphasizing areas such as evidence-based teaching practices, curriculum innovation, and community engagement.

3. Practical/Actionable Level (Project/Program Level)

At the programmatic level, actionable steps should be taken to enhance the effectiveness and sustainability of research capability training initiatives such as:

- *Secure Baseline Data Before Implementation*: Future training programs should begin with a baseline assessment of participants' research competencies and socio-economic status. This will enable robust comparisons and facilitate the measurement of long-term impacts.
- *Design Targeted Interventions*: Programs should address specific gaps identified during needs analyses, such as data analysis skills (Formeloza and Pateña, 2013; Gomez and Panaligan, 2013). Tailored workshops and hands-on sessions can equip teachers with the technical skills needed to produce high-quality research outputs.
- *Incorporate Follow-Up Mechanisms*: Post-training follow-ups, such as mentoring sessions, peer review groups, and periodic refresher courses, should be integrated into the program design. These mechanisms can help sustain engagement and address challenges encountered during implementation.
- *Leverage Technology for Research Training*: Utilize online platforms and digital tools to deliver flexible, accessible, and cost-effective training modules. This is particularly important in resource-constrained settings, as emphasized by De la Cruz (2016).
- *Foster a Culture of Inquiry*: Schools and program leaders should promote a culture of inquiry by recognizing and celebrating research achievements. Initiatives such as annual

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research conferences, publication awards, and collaborative research grants can incentivize sustained participation in research activities.

- *Integrate Action Research into Teaching Practices*: Encourage teachers to use action research as a tool for reflective practice and classroom improvement. As demonstrated by O'Connor, Greene, and Anderson (2006), action research not only enhances instructional practices but also empowers teachers to become change agents within their schools.

Thus, implementing these recommendations at the school-based, divisional/regional, and practical/actionable levels, stakeholders can maximize the impact of research capability training programs. These measures will not only enhance teachers' professional advancement and socio-economic status but also contribute to the broader goals of improving educational quality and fostering sustainable development within the Schools Division of El Salvador City.

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