

Capacitating Teachers' Research Skills Through the Adoption of Project DCBARS (Developing Culture of Basic and Action Research in School) in Del Remedio Elementary School

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Abstract

This study examined the effectiveness of Project DCBARS (Developing Culture of Basic and Action Research in School) in strengthening the research capabilities and productivity of 57 teachers at Del Remedio Elementary School. The intervention was anchored on the Sustainable Development Goals, the STRATA Framework of SDO San Pablo City, and the School-Based DRES Framework and employed a School Learning Action Cell (SLAC)-based training and write-shop model integrating capacity building, proposal development, research implementation and completion, collaboration, and mentorship. Using a single-group experimental design, the study administered pre- and post-intervention assessments and evaluated completed research outputs through quantitative and qualitative approaches. Before implementation, teachers demonstrated moderate overall research skills ($M = 2.43$, $SD = 0.86$), with weaknesses in research knowledge, collaboration, and application of findings. After implementation, overall research capability increased to Very High ($M = 4.24$, $SD = 0.69$), while submitted proposals and completed studies increased from two each to 23 each. The Wilcoxon Signed-Rank Test confirmed a statistically significant increase in research productivity ($W = 0$, $p < 0.05$). Workload, limited time, insufficient training, and confidence were identified as barriers, whereas mentoring, collaboration, and institutional support facilitated research engagement. The study concludes that Project DCBARS effectively strengthened teachers' research capabilities, productivity, and culture of inquiry, although research dissemination requires further support. Sustaining SLAC-based capacity building, advanced research training, mentorship, institutional support, and dissemination is recommended. The study is directly aligned with SDG 4 (Quality Education) through teacher professional development and improved educational practice and supports SDG 17 (Partnerships for the Goals) through collaboration, peer mentoring, shared expertise, and institutional support. Its sustainability impact lies in institutionalizing continuous research capacity building, collaborative inquiry, and evidence-based practice to support long-term school improvement and a potentially replicable school-based research culture.

Keywords: Action Research, Project DCBARS, Research Capabilities, Research Productivity, School Learning Action Cell (SLAC), Teachers, Training Write-Shop

1. Introduction

Teacher research strengthens reflective practice, evidence-based decision-making, and continuous school improvement. However, teachers' engagement in research is often constrained by gaps in technical competencies, limited institutional support, workload, and insufficient opportunities for collaboration and mentoring. Project DCBARS (Developing Culture of Basic and Action Research in School) addresses these concerns through a School Learning Action Cell (SLAC)-based training and write-shop model that integrates research capacity building, proposal development, research implementation and completion, collaboration, and mentorship. The project seeks to transform research from an occasional compliance activity into a sustainable culture of inquiry among teachers at Del Remedio Elementary School.

Research enables teachers to critically examine classroom practices, develop evidence-based interventions, and contribute to educational improvement. Mahani and Molki (2012) emphasized that research is integral to high-quality classroom instruction, while Tarrayo et al. (2021) argued that research engagement strengthens teachers' voices, critical thinking, and classroom strategies, contributing to curriculum innovation and whole-school reform. Thus, strengthening teachers' research capabilities supports both professional development and improved educational practice. In the Philippine basic education system, research is supported by Republic Act No. 9155 and reinforced by DepEd Orders No. 13, s. 2015; No. 39, s. 2016; No. 43, s. 2015; and No. 16, s. 2017, which promote evidence-based decision-making, capacity development, and collaborative research practices. Despite these institutional mandates, teachers may still encounter difficulties translating research expectations into sustained research engagement.

Recent literature indicates that teacher research capability depends on both individual competencies and the environment in which research occurs. Managad and Ancheta (2026) found that Master Teachers in Ilocos Norte demonstrated very satisfactory research skills, particularly in conceptualization, but had weaker competencies in data analysis. Caballero-Jaum and Quirap (2026) similarly emphasized that although mentoring and collaboration may be strong within schools, infrastructure and administrative support remain insufficient. These findings indicate the importance of interventions that combine technical capacity building with institutional support. Teacher research capability also involves motivational and socio-emotional dimensions. Justol and Paglinawan (2026) revealed that socio-emotional learning competencies, including collaboration, decision-making, and resilience, were stronger predictors of teachers' research capability than technical support alone. At the global level, Guinovart-Pedescoll et al. (2026) identified workload, limited institutional support, and lack of consensus regarding teacher research as persistent challenges. Collectively, these findings demonstrate that sustainable teacher research requires technical competence, collaboration, institutional backing, and supportive conditions for continued engagement. Research literacy and collaboration are particularly important in developing teachers as practitioner-researchers. Creswell and Creswell (2018) argue that foundational research literacy is essential for reflective practice, while Stutchbury and Fox (2019) emphasize that collaboration can reduce research anxiety and encourage engagement. Positive attitudes alone may therefore be insufficient without corresponding capacity development and institutional support. Nguyen (2021) points out that positive attitudes can be cultivated into active participation when paired with relevant training and institutional backing, while Tahir and Qadir (2021) stress the importance of administrative support in developing a school-based research culture.

The challenges identified in the literature are reflected in the context of Del Remedio Elementary School. During SY 2024–2025, the school reported only two research outputs, while none of its 57 teachers submitted an action research proposal and completed research despite administrative encouragement. Teachers identified insufficient research skills, training, time, and resources as difficulties in organizing and completing research activities. This situation demonstrates a gap between institutional expectations for research and teachers' actual capacity to participate consistently in research. Similar barriers have been identified beyond the school context. Borg (2017) noted that limited time, lack of mentorship, and insufficient understanding of research processes contribute to teacher non-participation. Nguyen (2021) further emphasized that teacher-researcher roles remain underdeveloped without systematic training and follow-up support. Limited opportunities for dissemination may also restrict engagement, as Tahir and Qadir (2021) argue that institutional encouragement for conference participation can motivate teachers to conduct and share research. These concerns are consistent with broader educational efforts to establish schools as learning organizations. The OECD (2020) emphasizes the development of research-literate educators who can respond to changing educational demands. Accordingly, strengthening teachers' capacity to conduct and apply research can support reflective practice, professional growth, learner outcomes, and institutional improvement.

Project DCBARS provides the study's primary intervention framework. It integrates technical skill development, collaborative inquiry, and institutional support within a continuous cycle of professional learning designed to develop teachers as practitioner-researchers. The model consists of interconnected processes involving training write-shops, research proposal development, conducting research, collaboration and sharing, research completion, and mentorship and support. Training write-shops develop foundational research competencies, while proposal development allows teachers to formulate research problems, questions, and methodologies. Conducting research facilitates the application of these competencies in actual educational contexts, while research completion reinforces scholarly rigor and accountability. Collaboration promotes shared expertise and institutional learning, and mentorship provides technical and motivational support. These elements function as a cyclical and

interdependent system in which capacity building supports proposal development and research implementation, while mentorship and collaboration reinforce completion, dissemination, and continued professional growth. The study is further anchored on the Sustainable Development Goals (SDG), the STRATA Framework of SDO San Pablo City, and the School-Based DRES Framework.

Existing literature establishes the importance of research competence, collaboration, mentoring, positive attitudes, and institutional support. However, the conditions at Del Remedio Elementary School indicate a continuing gap between expectations for teacher research and actual research engagement. Limited research output, insufficient technical skills, workload constraints, and inadequate opportunities for sustained research practice demonstrate the need for a structured and context-responsive capacity-building intervention. Project DCBARS addresses this gap through SLAC-based training and write-shops that provide teachers with structured opportunities to develop research competencies while receiving peer and institutional support. The intervention is intended not merely to increase research outputs but to establish research as an ongoing professional practice. In this context, the study examines teachers' research skills and productivity before and after Project DCBARS, the change in submitted and completed research outputs, and the influence of self-perceived limitations, institutional support, and workload challenges on teachers' research confidence, engagement, productivity, and application of research.

Project DCBARS is most directly aligned with SDG 4 – Quality Education because it strengthens teachers' professional competencies and supports the use of research to improve teaching methodologies, learner outcomes, and school improvement. This alignment is consistent with the paper's explicit positioning of Project DCBARS within the Sustainable Development Goals and its emphasis on empowering teachers as reflective practitioners. The project also supports the broader principle of SDG 17 – Partnerships for the Goals through collaboration, peer mentoring, shared expertise, and institutional support. Within the DCBARS model, collaboration and sharing enable teachers to participate in peer discussions, co-author research, and exchange knowledge through professional learning communities. These mechanisms reinforce collective professional learning and support the institutionalization of research within the school.

The study contributes primarily to educational, professional, and institutional sustainability by developing a school-based system through which teacher research can become continuous rather than episodic. Institutionalizing SLAC-based training and mentoring provides recurring opportunities for professional development, while collaboration and dissemination extend research beyond individual teachers toward collective school improvement. The paper further identifies the model as potentially replicable across schools and divisions for strengthening research capacity-building and collective practice.

2. Material and methods

2.1 Research Design

The study employed a single-group experimental design to evaluate changes in teachers' research capabilities following Project DCBARS. Baseline data were obtained through an initial assessment and survey at the beginning of School Year 2025–2026, which served as the pre-test. The same assessment was administered at the end of the school year as the post-test, supplemented by an evaluation of completed research outputs. The study incorporated quantitative and qualitative approaches in analyzing the gathered data.

2.2 Locale of the Study

The study was conducted at Del Remedio Elementary School, where Project DCBARS was adopted and implemented to strengthen teachers' competencies in conducting action research. The intervention was situated within the school's professional development setting and delivered through School Learning Action Cell-based training and write-shop sessions.

2.3 Respondents of the Study

The respondents consisted of 57 teachers of Del Remedio Elementary School. Based on the assessment survey, these teachers had not engaged in research activities or produced research outputs in previous years.

2.4 Sample and Sampling Procedure

The study involved all 57 teachers identified through the assessment survey as having no research activities or outputs in previous years. The original manuscript identifies these teachers as the study participants but does not specify a formal sampling technique or provide a separate sample-size computation. Therefore, no additional sampling method is assigned in this rewritten version.

2.5 Research Instrument

An assessment and survey were used to determine teachers' research capabilities before and after the intervention. The assessment covered research knowledge and skills, attitudes toward research, institutional support for research, collaborative research and peer support, challenges in conducting research, application of research findings, crafting of research proposals, and completion of research full papers. Completed research outputs were also evaluated to determine changes in their quality and completeness. The assessment used a five-point Likert scale ranging from Strongly Disagree (1.00–1.80) to Strongly Agree (4.21–5.00), with corresponding descriptors

from Very Low to Very High. The original manuscript does not provide information regarding the instrument's source, validation procedure, reliability testing, or pilot testing; consequently, these details were not added. The domains and rating structure are reflected in the manuscript's baseline assessment.

2.6 Data Gathering Procedure

At the beginning of School Year 2025–2026, an initial assessment and survey were administered to establish baseline data on teachers' research capabilities. Project DCBARS was subsequently implemented using a SLAC-based training and write-shop model structured around specific components of the action research process in accordance with DepEd Order No. 16, s. 2017. During each session, teachers developed a specific portion of their research proposal, progressively working toward a complete research plan. This segmented process was intended to sustain motivation, encourage active participation, and provide manageable research tasks. Training and write-shop sessions were conducted weekly every Friday. At the end of the school year, the same assessment was administered as the post-test. Participants' completed research outputs were also evaluated, and the pre-test and post-test results were compared to determine changes in research capabilities following the intervention.

2.7 Data Analysis Techniques

Quantitative and qualitative approaches were used to analyze the gathered data. For the quantitative component, mean, standard deviation, frequency distribution, and percentage were used to describe and compare teachers' research capabilities before and after Project DCBARS. The Wilcoxon Signed-Rank Test, a non-parametric test for two related samples, was applied to determine whether significant differences existed between the pre-test and post-test results. Comparative analysis was also conducted to assess improvements in the quality and completeness of teachers' research outputs.

3. Results and Discussion

3.1 Teachers' Research Capabilities Before and After Project DCBARS

3.1.1 Research Capabilities Before Project DCBARS

Before implementation, teachers had an overall research skills mean of 2.43 (SD = 0.86), interpreted as Moderate. Research Knowledge and Skills (M = 2.33, SD = 0.93) and Collaborative Research and Peer Support (M = 2.33, SD = 0.93) were rated Low, while Application of Research Findings received the lowest rating (M = 1.30, SD = 0.60). Attitudes Towards Research (M = 2.77, SD = 0.87), Institutional Support (M = 2.79, SD = 0.85), Crafting of Research Proposal (M = 2.94, SD = 0.84), and Completion of Full Paper (M = 2.88, SD = 0.76) were Moderate. These results indicate limited research competence, collaboration, and application despite moderate openness toward research. The low levels of research knowledge and collaboration suggest inadequate confidence in designing, analyzing, and writing research. Creswell and Creswell (2018) argue that foundational literacy in research is indispensable for reflective practice, while Stutchbury and Fox (2019) emphasize that collaboration reduces research anxiety and fosters engagement. The particularly weak application of findings indicates a gap between research and classroom practice, consistent with Kennedy (2016), who notes that research remains abstract when teachers lack opportunities to apply findings. Meanwhile, the moderate attitudes and institutional support indicate potential for improvement when relevant training and administrative backing are available, as emphasized by Nguyen (2021) and Tahir and Qadir (2021). These findings support the need for Project DCBARS as a structured intervention consistent with action research and professional development approaches promoted by the OECD (2020).

3.1.2 Research Capabilities After Project DCBARS

Following implementation, teachers' overall research capability increased to 4.24 (SD = 0.69), interpreted as Very High. Institutional Support (M = 4.64) and Collaborative Research and Peer Support (M = 4.63) obtained the highest ratings, followed by Attitudes toward Research (M = 4.41), Crafting of Research Proposal (M = 4.35), Application of Research Findings (M = 4.26), Research Knowledge and Skills (M = 4.18), and Completion of Full Paper (M = 4.02). Challenges in Conducting Research obtained a mean of 3.45, interpreted as High. These findings demonstrate marked improvement across the assessed dimensions after Project DCBARS. The improvement in research knowledge supports Leung (2020), who emphasized that targeted training enhances educators' technical and conceptual competencies, and Martin and Kraguljac (2021), who found that hands-on, context-specific training strengthens action research capability. Improved attitudes are consistent with Adams et al. (2021) and Zein (2021), who associate professional development and positive attitudes with motivation and sustained research engagement. The strong institutional support affirms Tahir and Qadir (2021) and Nguyen and Dao (2022), while increased collaboration supports Liu and Xu (2020). Although teachers continued to recognize research challenges, Pugach et al. (2020) and Tan and Nolan (2022) indicate that hands-on training and mentoring can make these barriers more manageable. The increased application of research findings further supports Kennedy (2020) and Thomas and Pring (2021), who emphasize practitioner inquiry as a means of strengthening reflective and evidence-based teaching.

3.2 Teachers' Research Productivity Before and After Project DCBARS

3.2.1 Research Productivity Before Project DCBARS

Before Project DCBARS, teacher research productivity was minimal. Only two research proposals (3.51%) were submitted, two research projects (3.51%) were conducted, and two research outputs (3.51%) were presented in conferences or forums. The limited number of outputs reflects low participation in research initiation, implementation, and dissemination. These findings reflect barriers to sustained teacher research. Borg (2017) noted that limited time, lack of mentorship, and inadequate understanding of research processes contribute to non-participation. Nguyen (2021) similarly emphasized that teacher-researcher roles remain underdeveloped without systematic training and follow-up support. Limited dissemination also supports Tahir and Qadir (2021), who identified institutional encouragement as important for conference participation and knowledge sharing. Kennedy (2016) further emphasizes the role of research in developing reflective practitioners, while the OECD (2020) stresses the importance of research-literate educators in developing schools as learning organizations.

3.2.2 Research Productivity After Project DCBARS

After Project DCBARS, research productivity increased substantially. The number of submitted research proposals, completed studies, and conference presentations reached 23 each against a target of 15, reported in the manuscript as 153%. This represented a considerable increase from the two proposals and two completed studies recorded before implementation. The increase indicates the effectiveness of structured training, mentorship, collaborative inquiry, and practical skill-building. Martin and Kraguljac (2021) observed that hands-on and guided research experiences enhance teachers' self-efficacy and engagement, while Tan and Nolan (2022) emphasize the importance of structured and collaborative environments in promoting active knowledge production. The manuscript nevertheless identifies external dissemination as a continuing concern. Adams et al. (2021) emphasize dissemination as important for professional growth and knowledge sharing, while the OECD (2020) stresses that teachers should be empowered both to conduct research and communicate their findings.

3.3 Statistical Difference in Research Productivity

3.3.1 Pre- and Post-Implementation Research Outputs

Research proposals increased from 2 before implementation to 23 after implementation, while completed action research studies likewise increased from 2 to 23. Both indicators therefore recorded positive differences of +21. The Wilcoxon Signed-Rank Test showed no negative differences and yielded $W = 0$, $p < 0.05$, indicating a statistically significant increase in research productivity following Project DCBARS. Consequently, the null hypothesis of no significant difference was rejected, while the alternative hypothesis of a significant increase in submitted and completed research was accepted. The statistically significant improvement indicates that the intervention had a meaningful and measurable effect on research engagement. This finding aligns with Martin & Kraguljac (2021), who emphasize that guided, hands-on research programs enhance teacher self-efficacy, and with Tan & Nolan (2022), who highlight the importance of structured collaborative environments in fostering active research participation. However, the continuing concern regarding dissemination indicates that increased production should be accompanied by opportunities for teachers to communicate their findings. The OECD (2020) likewise emphasizes the importance of empowering teachers to conduct and disseminate research as part of broader educational development.

3.4 Teachers' Lived Experiences in Developing Research Skills and Sustaining Productivity

3.4.1 Research Knowledge, Confidence, and Perceived Utility

Most teachers rated their research knowledge as average, with greater confidence in identifying research problems, conceptualizing the rationale, and collecting data than in data analysis, interpretation, reporting, and dissemination. Research engagement was generally infrequent, often occurring once a year or rarely. Despite these limitations, most teachers believed that research improves teaching practice and expressed willingness to strengthen their research capabilities. Teachers' awareness of their limitations reflects the importance of reflective practice identified by Hammersley-Fletcher and Lewin (2016), while infrequent research engagement corresponds with Goodwin's (2018) emphasis on time and systemic support. The need to develop advanced research competencies is supported by Voogt, Pieters, and Handelzalts (2016). Teachers' belief in the usefulness of research also reflects Mockler (2020), while their need for continued guidance is consistent with evidence that mentorship and ongoing Professional Development can strengthen confidence (Schreiner, 2019).

3.4.2 Institutional Support, Workload, and Training Barriers

Teachers reported the availability of some mentorship and technical assistance, but institutional support was constrained by workload and limited time. They identified time, mentoring, and training as essential forms of support and described overlapping duties and teaching demands as major barriers to research. Feelings of being overwhelmed and stressed were frequently reported, while many teachers indicated that they had not participated in formal research training. They consequently expressed a need for more time, hands-on training, mentoring, and ongoing job-embedded professional development. These experiences show that research participation depends not only on individual motivation but also on supportive institutional conditions. Administrative backing is crucial for sustained research engagement (Borg, 2018), while workload reduction can facilitate greater participation

(Van Katwijk et al., 2019). Addressing burnout is similarly important for sustaining inquiry (Kelchtermans, 2017), and structured training remains fundamental to research competence (Kennedy, 2016). Teachers' preference for practical and continuous support also aligns with Darling-Hammond, Hyler, and Gardner's (2017) advocacy for responsive and job-embedded professional learning.

3.5 Integration of Quantitative and Qualitative Findings

3.5.1 Convergence of Research Capability and Teachers' Experiences

Before Project DCBARS, quantitative findings showed moderate overall research skills ($M = 2.43$, $SD = 0.86$), including low levels of research knowledge ($M = 2.33$), collaboration ($M = 2.33$), and application of findings ($M = 1.30$). Qualitative findings similarly showed average self-perceived knowledge, confidence primarily in the initial phases of research, uncertainty in analysis and reporting, and barriers involving workload, limited time, stress, and insufficient formal training. After implementation, the overall quantitative rating increased to Very High ($M = 4.24$), with institutional support ($M = 4.64$), collaboration ($M = 4.63$), and application of findings ($M = 4.26$) showing substantial improvement. Teachers' experiences likewise reflected greater confidence, collaboration, institutional backing, and recognition of mentoring and training as important enablers. The convergence of quantitative and qualitative evidence indicates a shift from limited skills, confidence, and systemic support toward stronger research capability and engagement. Teachers valued research even before the intervention, but systemic barriers restricted their participation. Following Project DCBARS, the quantitative improvements and teachers' reported experiences both reflected greater empowerment, collaboration, and institutional encouragement. The combined findings therefore support the effectiveness of the write-shop model, mentorship, and collaborative inquiry in addressing both technical and motivational dimensions of teacher research while emphasizing the continuing importance of protected time, mentoring, and dissemination opportunities.

4. Conclusion & Recommendations

The study concludes that Project DCBARS effectively enhanced teachers' research capabilities and productivity. Before the intervention, teachers demonstrated low to moderate levels of research competence, with gaps in technical expertise, confidence, collaboration, and application of research findings. Following implementation, research capabilities increased to high and very high levels, while research productivity rose from only two proposals and two completed studies to 23 proposals and 23 completed studies, exceeding the institutional target of 15. The statistically significant increase in research outputs confirmed the effectiveness of the intervention in strengthening research engagement and fostering a culture of inquiry and collaboration. However, dissemination of research through conferences, forums, and other professional platforms remains an area requiring further support.

Project DCBARS should be sustained and institutionalized through regular SLAC-based research capacity-building activities, workshops, write-shops, collaborative sessions, and strengthened mentorship. Professional development should address remaining gaps in statistical analysis, qualitative coding, academic writing, reporting, and dissemination, while institutional support should include protected research time, reduced competing duties, appropriate research resources, and technical assistance. Schools should also strengthen research dissemination, collaboration, and partnerships; integrate research findings into school improvement planning and decision-making; establish systematic monitoring and evaluation; and consider Project DCBARS for wider adoption across other schools while recognizing research engagement in teacher evaluation and professional advancement.

The study was conducted with a limited number of teacher-participants, which may restrict the generalizability of the findings. Consequently, the effectiveness and broader applicability of Project DCBARS may require further validation through replication in other schools and with larger samples.

5. Compliance with ethical standards

The author declares no conflict of interest. The study involved teacher-participants from Del Remedio Elementary School; however, the manuscript does not explicitly state whether external funding was received, whether informed consent and voluntary participation procedures were implemented, whether data collection methods were non-invasive, or how confidentiality and identifying information were managed. These details should therefore be confirmed before inclusion in a journal-ready ethical considerations statement.

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