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Integrated Schools Teachers' Knowledge and Skills on Classroom-Based Action Research: Basis for Community Extension Program

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ABSTRACT

Purpose of the study. This study explored the competence and training needs of integrated school teachers in conducting Classroom-Based Action Research (CBAR), aiming to design a Community Extension Program that enhances their research capability.

Methodology. A Sequential Explanatory Mixed-Methods Design (QUAN → qual) was employed with 62 integrated school teachers from Balanga City, Bataan, Philippines. Data were gathered using a validated CBAR Competence and Training Needs Questionnaire, followed by semi-structured interviews with selected participants. Descriptive statistics, non-parametric tests, and thematic analysis were used to analyze the data.

Main Findings. Results showed that teachers demonstrated moderate competence in selecting a research focus (M≈2.64) and collecting data (M≈2.51), while they found analyzing and interpreting results (M≈2.39) and translating findings into action (M≈2.41) more challenging. Training needs were highest in statistical analysis (M≈3.57) and literature synthesis (M≈3.73). Teachers expressed strong willingness to conduct CBAR but identified areas where additional technical support, confidence-building, and institutional backing would be helpful.

Novelty/Originality of this study. Unlike most CBAR research in the Philippines that focuses on general public-school teachers, this study examines teachers from integrated schools in Balanga City, Bataan, Philippines, a unique context where educators handle multi-level and multi-subject responsibilities. This localized focus identifies the importance of strengthening research competence in schools with complex instructional settings. The study contributes by proposing a structured, year-long CBAR Capability-Building Program aligned with teachers' identified needs.

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1. INTRODUCTION

Action research is a method of systematically determining and resolving practical concerns that have direct impacts on people's everyday lives [1], [2]. In education, it is an effective method for improving teaching practices, enhancing student achievement, and promoting reflective teaching [3], [4]. Through action research, teachers not only counter real classroom problems but also help shape evidence-based practices that drive effective educational reforms [5]-[7].

To acknowledge its inherent worth, the Philippine Department of Education released DepEd Order No. 39, series of 2016, institutionalizing the Basic Education Research Agenda. The policy emphasizes the role of educational research in informing planning, policymaking, and program development. It places the teachers as front-line researchers who are capable of producing localized solutions to improve the teaching–learning process [8], [9].

While this is a mandate for Filipino teachers, many still find aspects of conducting action research challenging [10], [11]. Studies have reported that teachers often experience challenges in data analysis and interpretation [12], while one study [13] emphasized the importance of mentorship and professional guidance to build their research capacity. It was further stressed that factors such as experience, motivation, and age influence teachers' ability to produce research [14]. Henceforth, these studies suggest areas where teachers' readiness for systematic inquiry can still be strengthened. The significance of this gap cannot be overstated, as integrated school constitutes a growing trend in Philippine education, yet very little empirical evidence has been published that examines how integrated school teachers engage with Classroom-Based Action Research (CBAR). Only limited research exists, creating an opportunity to design more relevant professional development programs. This gap and the urgency of research reflect that integrated school teachers are experiencing layered instructional issues that would benefit from evidence-based approaches to improve learning outcomes. The novelty of this study is represented in the context of integrated school teachers in Balanga City, Bataan, Philippines, which has not been richly depicted in previous CBAR research. The goal of the study is to articulate teacher competencies and teacher training needs in this under-represented context and therefore inform a localized Community Extension Program that directly addresses teachers' realities. The principal goal of this study is to identify teachers' competence and training needs in conducting CBAR and then generate a capability-building program that is sensitive to their situated context.

Several studies have shown that certain barriers are attributed to a lack of research abilities and inadequate institutional support for teachers [15], [16]. It was also observed that teachers face challenges in formulating research questions, preparing instruments, and reporting results [17], [18] time constraints and heavy workloads often add to these challenges. It was likewise pointed out that anxiety and limited confidence sometimes make it more difficult for teachers to write and publish research, illustrating the importance of providing structured and sustainable training opportunities for teachers [19], [20].

International evidence also shows that capacity-building initiatives can significantly improve teachers' research competence. One study [21] argued that action research within teacher education programs cultivates reflective practice and instructional innovation, while another study [22] demonstrated that cross-cultural training and mentorship can enhance teachers' research skills when properly contextualized. Thus, these studies suggest that localized professional development efforts, particularly those aligned with teachers' classroom realities, can meaningfully strengthen their capacity for classroom-based action research.

These insights surmise the urgent need to enhance teachers' competence in conducting Classroom-Based Action Research (CBAR), particularly in integrated schools where educators often face multifaceted instructional challenges. Strengthening their research capability is not only important for professional growth but also for ensuring that teaching practices remain responsive to diverse learner needs.

In light of these concerns, this study assessed the competence and training needs of integrated school teachers in the City of Balanga in conducting Classroom-Based Action Research (CBAR). The findings will serve as the basis for a contextualized community extension program, spearheaded by the College of Education, designed to equip teachers with the necessary knowledge and skills to integrate research into their teaching practices effectively.

2. RESEARCH METHOD

2.1. Type of Research

This study employed a Sequential Explanatory Mixed-Methods Design (QUAN → qual). The design employed the quantitative phase to establish baseline measures of competence and training needs in Classroom-Based Action Research (CBAR). The subsequent qualitative phase provided explanations and contextualized the quantitative findings [23]. Integration of the two strands occurred at three points: connecting (using quantitative results to guide qualitative sampling), building (designing interview prompts based on survey results), and merging (presenting both data sets through joint displays for meta-inference) [24], [25].

2.2. Research Subjects

The participants were full-time teachers from seven integrated schools in Balanga City, Bataan, Philippines. The total population consisted of 85 teachers, of which 62 participated in the survey, representing a response rate of 72.9 percent. Inclusion criteria required that participants were currently handling classes during the data collection period and were willing to voluntarily participate, while teachers on extended leave or with purely administrative assignments were excluded. For the qualitative phase, 10 teachers were purposively selected to represent varied competence levels, subject specializations, and school assignments.

2.3. Data Collection Instruments and Techniques

Data were collected in two phases. In the quantitative phase, a researcher-developed CBAR Competence and Training Needs Questionnaire was used. The instrument was derived from the DepEd CBAR framework and a review of related literature. Content validation [26] was carried out by three experts in educational research and professional development, producing an Item-CVI ranging from .83 to 1.00 and an S-CVI/Ave of .94. Pilot testing with 15 teachers from another division resulted in minor revisions. Reliability testing using Cronbach's α showed values between .78 and .88 across domains, which indicates acceptable to excellent internal consistency. Surveys were administered during faculty meetings and took approximately 20–25 minutes to complete. In the qualitative phase, semi-structured interview guides were constructed based on the lowest-rated domains in the survey. Interviews were conducted either in person or via video conferencing, lasting 30–45 minutes each. All sessions were audio-recorded with consent, transcribed verbatim, and supported by open-ended responses from the survey [27].

2.4. Data Analysis Techniques

Quantitative data were analyzed using descriptive statistics (mean, standard deviation, median, and interquartile range) and non-parametric tests, such as the Mann–Whitney U and Kruskal–Wallis tests, which are appropriate for ordinal data from Likert scales. Competence and training needs were interpreted using the following cut-offs: 3.26–4.00 (high competence/high need), 2.51–3.25 (moderate competence/moderate need), 1.76–2.50 (Developing competence/low need), and 1.00–1.75 (Developing Competence/no need). Qualitative data were subjected to thematic analysis following Braun and Clarke's six-phase process [23]. To ensure trustworthiness, the researchers employed member checking, peer debriefing, and maintained an audit trail [28]. Intercoder reliability was calculated using Cohen's κ, which yielded a value of .84, denoting strong agreement. Quantitative and qualitative results were then integrated through joint displays and meta-inferences [29].

2.5. Research Procedures

The conduct of the study followed five phases. The preparation phase included the development and validation of instruments, securing necessary approvals, and obtaining informed consent from participants. The quantitative phase involved the administration of the CBAR Competence and Training Needs Questionnaire to 62 teachers, followed by descriptive and inferential statistical analysis. The qualitative phase was carried out by selecting 10 teachers for semi-structured interviews, which were later transcribed and analyzed thematically [23]. The integration phase followed, where quantitative and qualitative results were combined using joint displays to generate meta-inferences [24]. Finally, the program development phase produced a six-part CBAR Capability-Building Program that addressed the identified gaps in competence and training needs.

2.6. Research Procedure Flowchart

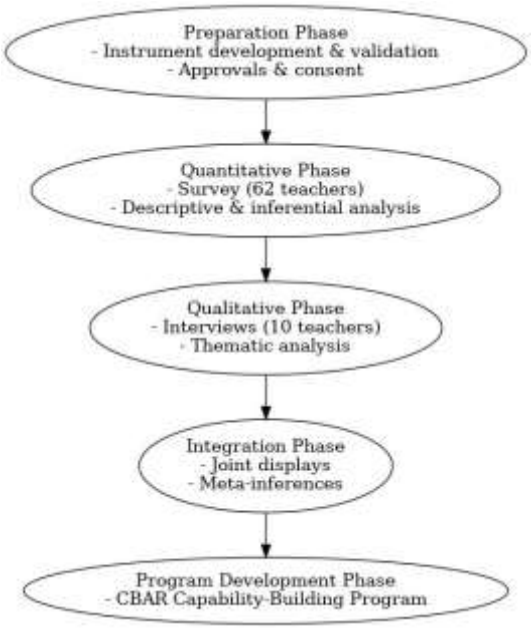

Figure 1. Research Procedure

Figure 1. The research procedure was conducted in five sequential phases, beginning with preparation and progressing through quantitative and qualitative data collection, integration, and program development. Each

phase was systematically connected to the next, ensuring methodological rigor and the formulation of a context-responsive CBAR Capability-Building Program.

Table 1. Participant Demographics by School (N = 62)

School	n	Male (%)	Female (%)	Master Teachers (n)	Academic Teachers (n)	Mean Years of Service (SD)
Integrated School 1	9	44.4	55.6	2	7	8.1 (3.2)
Integrated School 2	8	37.5	62.5	1	7	7.5 (2.8)
Integrated School 3	10	40.0	60.0	2	8	9.0 (3.6)
Integrated School 4	7	42.9	57.1	1	6	6.8 (2.1)
Integrated School 5	9	33.3	66.7	2	7	7.9 (2.9)
Integrated School 6	10	50.0	50.0	2	8	8.4 (3.0)
Integrated School 7	9	44.4	55.6	1	8	7.2 (2.5)

Note. Percentages may not total 100 due to rounding. SD = standard deviation.

Table 2. Internal Consistency Reliability of CBAR Competence and Training Needs Questionnaire by Domain

Domain	Number of Items	Cronbach's α
Selecting a Focus	6	.81
Data Collection	7	.84
Analysis & Interpretation	6	.88
Taking Action	5	.78

Note. Reliability analysis conducted on pilot test data (n = 15). All α values exceed the recommended threshold of .70, indicating acceptable to excellent internal consistency.

3. RESULT AND DISCUSSION

This section discusses the skills and training needs of integrated school teachers for conducting Classroom-Based Action Research (CBAR). The quantitative results are backed by qualitative insights, and the discussion goes further than just description by examining the reasons for teachers' strengths and weaknesses. The analysis ties these findings to the broader research environment in Philippine schools, which greatly influences teachers' practices and limitations.

Competence in Selecting a Focus

Teachers' competence in selecting a research focus was found to be moderate overall (M = 2.64, SD = 0.51). Table 3 presents the detailed findings.

Table 3. Competence in Selecting a Focus in Classroom-Based Action Research (N = 62)

Indicators	M	SD	DE
Identifying a research topic from classroom observation, experience, and reflection	3.08	0.58	Competent
Narrowing the identified topic into a researchable concept	2.71	0.46	Competent
Justifying the conduct of research	2.68	0.47	Competent
Designing concise classroom-based research questions	2.55	0.50	Competent
Searching the literature related to the problem	2.53	0.54	Competent
Synthesizing information from the literature review	2.34	0.50	Competent
Formulating the hypotheses of the study	2.61	0.49	Competent
Composite	2.64	0.51	Competent

Note. Scale of means: 4.00–3.26 = Highly Competent; 3.25–2.51 = Competent; 2.50–1.76 = Developing competence; 1.75–1.00 = Needs Support.

The highest-rated competence was identifying a research topic (M = 3.08), while the lowest was synthesizing information from literature reviews (M = 2.34). This suggests that teachers are adept at recognizing classroom-based issues but struggle to contextualize them within existing scholarship. Participants reported being

overwhelmed by the volume of literature and lacking strategies to synthesize information effectively: *"It takes a lot of time and concentration to organize notes carefully and ensure the information is accurate."* (Teacher 007). This finding is consistent with some studies [6], [7], [30], [31] that emphasized teachers' struggles in integrating related studies, which often undermines the quality of research.

The results also reveal that while teachers can generate ideas, they find narrowing them into researchable questions challenging. One teacher noted feeling *"feeling challenged by having too many possible ideas."* (Teacher 018). Such challenges reinforce earlier observations [19], [32], [33] that found that anxiety and self-doubt hinder teachers' ability to initiate research. Thus, competence-building in focus selection should emphasize strategies for refining broad classroom concerns into manageable, researchable problems [3], [16], [33].

Competence in Collecting Data

Teachers exhibited moderate competence in data collection (M = 2.51, SD = 0.60), as presented in Table 4.

Table 4. Competence in Collecting Data in Classroom-Based Action Research (N = 62)

Indicators	M	SD	DE
Proposing an intervention to solve the identified problem	3.16	0.68	Competent
Selecting the appropriate research approach and methodology	2.52	0.59	Competent
Testing the validity and reliability of the research instrument	2.65	0.52	Competent
Designing the sampling procedures	2.32	0.57	Developing competence
Constructing the research instrument and its validity and reliability	2.35	0.60	Developing competence
Deciding on the most appropriate statistical or analytical tool	2.16	0.58	Developing competence
Developing data-gathering protocols	2.44	0.64	Developing competence
Composite	2.51	0.60	Competent

Note. Scale of means: 4.00–3.26 = Highly Competent; 3.25–2.51 = Competent; 2.50–1.76 = Developing competence; 1.75–1.00 = Needs Support.

Teachers demonstrated stronger competence in proposing interventions (M = 3.16) but reported the lowest competence in selecting statistical tools (M = 2.16). One participant remarked: *"Choosing the right statistical or analytical method is important, but sometimes confusing and like solving a complex maze."* (Teacher 044). These results resonate with recent studies [20], [33], [34], which noted that teachers unfamiliar with research methodology struggle with data collection and analysis, particularly in quantitative approaches [10], [19], [35]. The lack of competence in designing sampling procedures and protocols suggests gaps in methodological literacy in conducting research, which are valuable in ensuring research validity. Therefore, without foundational knowledge in instrument construction and sampling, research risks becoming methodologically weak, limiting its credibility and impact [9], [11], [36].

Competence in Analyzing and Interpreting Data

Teachers reported developing competence in analyzing and interpreting data (M = 2.39, SD = 0.44), as shown in Table 5.

Table 5. Competence in Analyzing and Interpreting Data in Classroom-Based Action Research (N = 62)

Indicators	M	SD	DE
Using technology to create charts, graphs, and tables	3.03	0.40	Competent
Sorting data according to themes or narratives	2.66	0.48	Competent
Inferring patterns and themes from data	2.26	0.44	Developing competence
Utilizing statistical tools for data analysis	2.21	0.41	Developing competence
Substantiating research findings with literature	2.15	0.51	Developing competence
Composite	2.39	0.44	Developing competence

Note. Scale of means: 4.00–3.26 = Highly Competent; 3.25–2.51 = Competent; 2.50–1.76 = Developing competence; 1.75–1.00 = Needs Support.

Although teachers showed competence in using technology for data presentation (M = 3.03), their ability to analyze and interpret findings was limited. A language teacher admitted: *"I feel less confident about statistical analysis since I didn't study much math."* (Teacher 026). This illustrates a mismatch between teachers' academic backgrounds and the methodological demands of CBAR. Similarly, Teacher 031 acknowledged feeling less confident because of limited orientation in action research, echoing recent studies' [15], [37], [38] findings that insufficient training contributes to teachers' hesitation in conducting research.

This lack of analytical competence has important implications. Without the ability to extract themes, infer patterns, and substantiate findings with literature, CBAR risks being reduced to descriptive reporting. As the newly published papers [6], [7], [39], [40] stressed, analysis and interpretation are the critical stages where data are

transformed into actionable insights [2], [7], [9], [34]. Thus, targeted capacity-building in statistics and qualitative coding is urgently needed.

Competence in Taking Action

Finally, teachers reported developing competence in translating findings into actions (M = 2.41, SD = 0.46), as shown in Table 6.

Table 6. Competence in Taking Action in Classroom-Based Action Research (N = 62)

Indicators	M	SD	DE
Summarizing key results	2.31	0.47	Developing competence
Drawing conclusions from data	2.56	0.44	Competent
Recommending interventions	2.18	0.39	Developing competence
Writing the final report	2.57	0.56	Competent
Composite	2.41	0.46	Developing competence

Note. Scale of means: 4.00–3.26 = Highly Competent; 3.25–2.51 = Competent; 2.50–1.76 = Developing competence; 1.75–1.00 = Needs Support.

Teachers were Competent in drawing conclusions and writing reports, but struggled with summarizing findings (M = 2.31) and recommending interventions (M = 2.18). This suggests difficulty in bridging the gap between analysis and application. Recent studies [12], [41], [42] similarly reported that Filipino teachers often lack the skills to derive actionable insights from their research, leading to the underutilization of findings.

Teachers themselves recognized these gaps: *"I recognize that I need more practice in research writing since my experience and training are still limited."* (Teacher 027). Another noted: *"Completing one research study doesn't automatically mean being fully proficient yet."* (Teacher 035). These perspectives emphasize that competence in action research is developed through continuous practice and sustained mentorship [12], [40], [41], [42], not isolated training.

Training Needs in Classroom-Based Action Research

Alongside competence, this study assessed teachers' training needs to identify priority areas for capacity-building. Results show that teachers consistently expressed high levels of need in statistical analysis, data interpretation, literature synthesis, and intervention recommendation.

Training Needs of Integrated Schools' Teachers in Classroom-Based Action Research

Table 7. Training Needs in Selecting a Focus (N = 62)

Indicator	M	SD	Level of Need
Identifying a research topic in the field of classroom observation, experience, and reflection	3.19	0.40	Moderately needed
Narrowing the identified topic into a researchable concept	2.81	0.44	Moderately needed
Justifying the conduct of research	2.97	0.44	Moderately needed
Designing concise classroom-based research questions	3.58	0.77	Highly needed
Searching the literature related to the problem	2.84	0.49	Moderately needed
Synthesizing information from the literature reviews	3.73	0.51	Highly needed
Formulating the hypotheses of the study	2.74	0.65	Moderately needed
Composite	3.12	0.53	Moderately needed

Note. Scale: 4.00–3.26 = Highly needed; 3.25–2.51 = Moderately needed; 2.50–1.76 = Low need; 1.75–1.00 = No need.

Teachers expressed the highest need for training in synthesizing literature (M = 3.73) and designing research questions (M = 3.58). These gaps confirm earlier competence findings and emphasize the importance of research framing in CBAR. Teacher 019 narrated the importance of mastering literature review, data analysis, and critical thinking skills, stressing the need for holistic training. This supports the literature's claim [14], [37], [39], which argues that motivation and skill-building in the literature review are essential to improving research productivity [4], [35].

Teachers consistently indicated the highest need for training in synthesizing literature (M = 3.73) and in designing research questions (M = 3.58)**.** These findings reflect global studies that emphasized that teachers' struggle with transforming broad classroom experiences into researchable problems [36], [39]. As one participant

shared, *"Finding the right literature can be challenging… even when I find what I need, organizing it into my research takes time and effort."* (Teacher 022). This resonates with published research [13], [31], [35] the assertion that literature reviews remain one of the most daunting research skills for teachers, owing to both language barriers and workload constraints.

Table 8. Training Needs in Collecting Data (N = 62)

Indicator	M	SD	Level of Need
Proposing an intervention to solve the identified problem	3.27	0.52	Highly needed
Selecting the appropriate research approach and methodology	3.19	0.44	Moderately needed
Testing the validity and reliability of the research instrument	3.31	0.50	Highly needed
Designing the sampling procedures	3.35	0.48	Highly needed
Constructing the research instrument and its validity and reliability	3.23	0.56	Moderately needed
Deciding the most appropriate statistical or analytical tool for data collection and hypothesis testing	3.52	0.50	Highly needed
Developing data-gathering protocols	3.26	0.44	Highly needed
Composite	3.30	0.49	Highly needed

Note. Scale: 4.00–3.26 = Highly needed; 3.25–2.51 = Moderately needed; 2.50–1.76 = Low need; 1.75–1.00 = No need.

Teachers identified statistics and sampling as the most pressing needs**.** As one participant admitted, *"One of the most challenging tasks is selecting the appropriate statistical or analytical tool for data collection and hypothesis testing. It often feels like navigating a complex maze"* (Teacher 044). This experience of teachers is similar to the report [34], [41] who noted that Filipino teachers often lack familiarity with the fundamental principles of research design and analysis. Importantly, these challenges require support, particularly in hands-on statistical literacy training and scaffolding for methodological decision-making, as also recommended in some studies [14], [17], [20].

Table 9. Training Needs in Analyzing and Interpreting Data (N = 62)

Indicator	M	SD	Level of Need
Using technology to create charts, graphs, and tables	2.97	0.42	Moderately needed
Sorting data according to themes or narratives	3.39	0.49	Highly needed
Inferring patterns and themes from gathered data	3.48	0.39	Highly needed
Utilizing statistical or analysis tools to analyze data	3.57	0.45	Highly needed
Substantiating research findings using related literature	3.32	0.51	Highly needed
Composite	3.35	0.45	Highly needed

Note. Scale: 4.00–3.26 = Highly needed; 3.25–2.51 = Moderately needed; 2.50–1.76 = Low need; 1.75–1.00 = No need.

The results support the training needs in both quantitative and qualitative analysis. Teachers expressed apprehension toward statistical analysis, especially those from non-mathematics backgrounds: *"I feel anxious about statistical analysis since I didn't study much math—it sometimes feels like a big hurdle."* (Teacher 026). This study identifies training needs in both qualitative data analysis and the review of related literature. Consistent with the findings of recent studies [6], [11], [17]. The review of related studies emphasizes that strengthening these areas is essential for building teachers' research capacity. International literature further supports this view, showing that developing analytic confidence through scaffolded practice and mentorship can significantly enhance teachers' engagement in research [21], [43].

Table 10. Training Needs in Taking Action (N = 62)

Indicator	M	SD	Level of Need
Summarizing key results/findings of the study	3.32	0.51	Highly needed
Drawing conclusions based on the results of data analysis and interpretation	3.47	0.51	Highly needed
Recommending interventions based on the conclusion	3.37	0.49	Highly needed
Writing the final report of the study	3.21	0.42	Moderately needed
Composite	3.34	0.48	Highly needed

Note. Scale: 4.00–3.26 = Highly needed; 3.25–2.51 = Moderately needed; 2.50–1.76 = Low need; 1.75–1.00 = No need.

Teachers strongly emphasized the importance of training in drawing conclusions and recommending interventions, which are essential for translating research into practice. One teacher remarked, *"Action research enables me to identify areas for improvement, implement interventions, and adapt to my students' needs. But I would benefit from more guidance in planning and reporting effectively."* (Teacher 027). This resonates with studies [12], [41], [44] that found that while Filipino teachers view research positively, they require structured support to progress from data collection to practical classroom application.

Across the four domains, teachers demonstrated moderate to high training needs, especially in literature synthesis, methodological decision-making, data analysis, and action-taking. These needs parallel the literature [18], [45], which suggests that Filipino teachers' struggles with problem formulation and data handling, and showed that targeted training interventions significantly improve teachers' research attitudes and competencies.

Moreover, teacher voices in this study emphasize a recurring theme: lack of confidence in technical areas (statistics, literature synthesis, report writing) paired with strong recognition of research's value for professional growth [19], [42], [46]**.** This suggests that training should not only build skills but also reduce anxiety and cultivate a research identity [10], [20], [36]. Embedding mentorship, collaborative inquiry, and iterative practice [2] may therefore provide a sustainable pathway for capability-building in CBAR.

Strengths and Emerging Competencies in CBAR

Teachers showed moderate skill in choosing a research focus (M = 2.64) and collecting data (M = 2.51). They were particularly strong in identifying relevant classroom problems (M = 3.08) and proposing initial interventions at the planning stage (M = 3.16). This indicates that teachers are observant and responsive to classroom realities, consistent with findings that teachers can readily recognize instructional challenges [41]. However, these strengths appear to arise more from practical teaching experience than from formal research training [13]. Teachers were comfortable identifying immediate issues and suggesting possible solutions, but they struggled to connect these ideas with existing research or theoretical frameworks [31]. This reflects the Philippine school context, where day-to-day concerns often take precedence over sustained inquiry.

Areas for Improvement and Growth

Challenges in Literature Review and Synthesis. The lowest competence was in synthesizing information from the literature (M = 2.34). Teachers reported difficulty managing the volume of available research and lacked strategies for integration. Limited access to academic databases and structured mentorship in many Philippine schools exacerbates this issue [48], [49]. Consequently, many reviews lean more toward description than analysis, reflecting the need for additional training in synthesis strategies. Prior studies have observed that weak literature foundations often result in poorly framed research questions, which affect subsequent phases of action research [15].

Challenges in Statistics and Data Analysis. Another major gap was in statistical analysis and interpretation (M = 2.21), where many teachers expressed anxiety and a lack of confidence. Teachers without strong mathematics backgrounds found this area particularly challenging [11]. This suggests the need for closer alignment between teacher education curricula and the methodological demands of classroom-based research [50]. Although basic statistics are taught at the undergraduate level, it is rarely contextualized for action research, contributing to avoidance behaviors noted in prior research on Filipino teachers.

Training Priorities and Capacity-Building Needs. Teachers also demonstrated difficulty in moving from results to practice (M = 2.41), especially in summarizing findings (M = 2.31) and recommending interventions after analysis (M = 2.18). This stresses an important distinction: while teachers can propose interventions at the start of a study (planning stage), they struggle to refine and recommend interventions based on actual data (application stage). Contributing factors include limited institutional support, time constraints for experimentation, and an underdeveloped structure for collaborative research culture. As earlier studies have shown, research in Philippine schools is often approached as a requirement for administrative or promotional purposes, which may limit its potential as a sustained practice for professional development [18].

Implications for Strengthening the Research Culture in Philippine Schools

These findings indicate that teachers' weaknesses in statistics, data interpretation, and literature review are not simply individual shortcomings but mirror issues in the Philippine research culture. Although the Department of Education institutionalized teacher research through policies such as DepEd Order No. 39, s. 2016, many schools continued to work toward strengthening the necessary conditions. Teachers carry heavy instructional and administrative loads, which makes dedicated time for research challenging. In addition, access to journals, software, and training is still developing in many integrated schools [10], [11]. Structured mentorship is also scarce, which forces many teachers to work in isolation [13]. In addition, research is frequently perceived more as a requirement for promotion than as an integral part of professional learning [17], [18].

The results further reveal that teachers' competence in CBAR is uneven: they are stronger in identifying classroom issues but weaker in framing, analyzing, and applying research. These weaknesses are interconnected—difficulty synthesizing literature often leads to poorly defined research questions, which complicates data analysis

and limits actionable outcomes. This supports prior studies noting that gaps in literature review and data handling directly affect the quality of teachers' action research [6], [41].

The implication is clear: capacity-building must nurture the technical and cultural aspects of research. Teachers require training in statistics, qualitative analysis, and literature synthesis, but they also need sustained mentoring, peer collaboration, and institutional support to embed research into their professional practice. Studies have shown that when teachers are supported by structured communities of practice, action research becomes less of a compliance task and more of a driver of reflective teaching and classroom innovation [9].

This research contributes by proposing a localized program to strengthen the skills of integrated school teachers in Balanga City, Bataan, Philippines. By focusing on a context that has seldom been examined, it provides insights that schools, teacher education institutions, and policymakers can use to design more focused professional development. However, the study had its limitations: it concentrated on seven schools within a single city and relied on self-reported data, which may not fully capture teachers' actual competence. Future research should extend to other regions, monitor teachers' progress over time, and closely examine how CBAR is applied in classroom practice after training.

4. CONCLUSION

This study examined the skills and training needs of integrated school teachers in Balanga City, Bataan, Philippines, for conducting Classroom-Based Action Research (CBAR). The results showed that while teachers could choose research topics and gather data at a moderate level, they had difficulty with analysis, interpretation, and applying findings in the classroom. Their greatest training needs were in statistical analysis, reviewing literature, and creating effective interventions. These findings indicated that their ability to carry it out was sometimes constrained by technical skills, confidence, and institutional support that could still be strengthened.

The results emphasized that Classroom-Based Action Research (CBAR) should be seen as a connected process, where weaknesses in one part affect the others. For instance, difficulty in reviewing literature weakened research questions. Likewise, a lack of statistical knowledge made it hard to understand findings. To address these gaps, systematic training is needed to build teachers' skills step by step, from developing research questions to analyzing results and applying conclusions in their classrooms. Teachers also pointed out the importance of ongoing guidance, mentoring, and collaboration opportunities, which would help ease anxiety and boost their confidence in doing research.

In response, this study proposed a year-long Classroom-Based Action Research (CBAR) Capability-Building Program that included modular workshops, mentoring sessions, and peer research circles. These efforts can enhance technical skills, create spaces for collaboration, and develop a research culture within schools. For policy and practice, schools and divisions should consider reducing teaching loads for teachers involved in research, providing modest research grants, and ensuring access to digital resources and statistical tools. Addressing both technical gaps and emotional challenges can make CBAR more sustainable and relevant for teachers.

Finally, while this study offered a localized view of the challenges faced by integrated school teachers, its scope was limited to seven schools in one city and relied on self-reported data. Future studies should broaden their reach to other regions, track teachers' progress over time, and assess how CBAR projects are applied after training. In this manner, stronger evidence can be gathered on how focused capacity-building leads to better classroom practices and enhances student learning outcomes.

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