

Perceived Effectiveness of In-Service Training (INSET) Programs among Selected Senior High School Teachers in the City Schools Division of Marawi (CSDM): Basis for the Development of an INSET Manual

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ABSTRACT

This study evaluated the effectiveness of targeted In-Service Training (INSET) programs in improving teaching practices among senior high school teachers in the City Schools Division of Marawi. Using a convergent mixed-methods design, the study involved thirty teachers and six school principals from selected public and private senior high schools handling subjects included in the 2023 National Achievement Test (NAT) Grade 12, specifically Media and Information Literacy, Science, and Humanities - identified as the lowest-performing subject areas in the division. Quantitative data were gathered through pre- and post-assessments and structured survey questionnaires to measure changes in instructional practices, confidence, and technology integration. Qualitative data were collected through semi-structured interviews and focus group discussions to capture teachers' experiences and contextual insights regarding the INSET implementation. Quantitative data were analyzed using descriptive statistics, while qualitative data underwent thematic analysis to support methodological triangulation. Findings revealed measurable improvements in instructional strategies, increased use of learner-centered and contextualized approaches, and enhanced teacher confidence and professional engagement following the training. Qualitative results further indicated that teachers valued the relevance, practicality, and contextual alignment of the INSET sessions, although challenges related to resource availability and ICT access persisted. The study concludes that context-responsive INSET programs can effectively strengthen teaching practices and address subject-specific performance gaps. Findings serve as a basis for refining and sustaining INSET initiatives aimed at improving instructional quality and supporting student learning outcomes in resource-constrained educational settings.

Keywords: Teacher proficiency, student performance, National Achievement Test (NAT), In-Service Training (INSET) Program, Adult Learning Theory (Andragogy).

INTRODUCTION

Education fundamentally underpins national development by cultivating human capital, promoting innovation, and driving social progress (Premachandran, 2025). At the heart of this mission are teachers, whose proficiency critically determines the quality of instruction and student learning outcomes. However, teachers face mounting challenges that directly impact their effectiveness and the educational expertise they provide. Research consistently demonstrates that teacher burnout, inadequate motivation, and declining instructional quality represent significant obstacles to achieving educational excellence, particularly in resource-constrained

environments (Adeoye, et al., 2023).

In the City Schools Division of Marawi, the 2023 National Achievement Test (NAT) G12 results revealed notable deficits in student performance, particularly in Media and Information Literacy, Science, and Humanities, highlighting urgent needs for targeted pedagogical improvements. Based on BARMM/Marawi NAT data, these subjects ranked 1–3 (lowest performance) out of seven assessed subjects, with Mean Percentage Scores (MPS) ranging from 37.64 to 40.06 - all below 41 - underscoring critical and urgent performance gaps that informed the focus of this study. These performance gaps cannot be adequately addressed without understanding and improving the underlying conditions that affect teacher effectiveness. Contemporary educational research emphasizes that student learning outcomes are not solely determined by curriculum design or student characteristics; rather, they reflect a complex interplay between teacher competencies, psychological well-being, and professional engagement (Premachandran, 2025).

Teacher motivation and work engagement emerge as critical determinants of instructional quality. Studies have shown that teachers experiencing high levels of burnout demonstrate reduced effectiveness in classroom instruction, diminished student engagement, and decreased academic achievement among learners (Lee, et al., 2023). Conversely, teachers with strong professional motivation and psychological well-being create more supportive learning environments, exhibit enhanced pedagogical creativity and maintain stronger student relationships, all of which directly impact academic outcomes (Premachandran, 2025). The quality of teacher-student relationships and emotional competence play particularly significant roles in shaping classroom climate and student learning experiences (Poulou and Garner 2024).

Furthermore, instructional quality, encompassing effective classroom management, responsive teaching strategies, teacher support, and cognitive activation play a paramount role in shaping student achievement and fostering equitable learning opportunities (Liu, 2024). Teachers prepared through comprehensive professional development programs demonstrate markedly improved instructional practices, stronger content mastery, and enhanced capacity to respond to diverse student needs (Paolini, 2015). In-service training programs, when designed contextually and delivered with ongoing support, have been shown to significantly enhance teacher professional competencies, strengthen their pedagogical leadership, and increase their intrinsic motivation for continuous professional growth.

The interconnection between teacher professional development, instructional quality, and student outcomes is well-documented in international research. Effective professional development programs that combine trainer introduction, demonstration, active learning experiences, reflective practice opportunities, and sustained follow-up support produce tangible improvements in both teacher practice and student achievement (Dunst, et al., 2015). Such programs are particularly crucial in resource-constrained contexts like Marawi, where teachers often face unique sociocultural challenges and limited access to professional learning opportunities (Iqbal and Ali, 2024).

This study investigates the perceived effectiveness of In-Service Training (INSET) programs among senior high school teachers in Marawi, aiming to address instructional gaps and professional development needs through context-sensitive, evidence-based approaches. By examining how INSET programs influence teacher motivation, work engagement, instructional quality, and ultimately student learning outcomes, this research contributes to the broader understanding of how professional development can be strategically deployed to empower educators, foster collaborative learning communities, and raise the standard of instruction in secondary schools operating within resource-constrained and socio-culturally distinct environments.

Theoretical Framework

This research is anchored in three complementary theoretical models: Guskey's Model of Teacher Change (2002), Kirkpatrick's Four-Level Training Evaluation Model (1994), and Knowles' Adult Learning Theory (Andragogy, 1984).

Guskey's Model of Teacher Change conceptualizes professional growth as a process involving cognitive,

emotional, and behavioral transformations. It emphasizes how changes in teacher beliefs and knowledge lead to improved classroom practices and student outcomes, highlighting the role of sustained self-efficacy and continuous feedback.

Kirkpatrick's Four-Level Evaluation Model provides a comprehensive framework for assessing training effectiveness through four levels: reaction (participant satisfaction), learning (knowledge acquisition), behavior (application of skills), and results (impact on organizational goals such as student achievement). This ensures that training evaluation transcends immediate knowledge gains to include actual classroom behavior and educational outcomes.

Knowles' Adult Learning Theory (Andragogy) underscores adult learners' need for self-directed, experiential, and problem-centered learning that builds on their experience. The theory justifies designing INSET sessions to be interactive and contextually relevant, fostering deeper engagement and practical application among teachers.

Together, these frameworks orient the design, implementation, and evaluation of the INSET programs to create sustainable improvements in teacher proficiency and student performance.

Conceptual Framework

The conceptual framework presents the premise that low student performance in the 2023 National Achievement Test (NAT) G12 was influenced by the type and quality of instructional strategies and teacher training programs, which in turn determined the relevance and impact of the training initiative.

Objectives of the Study

1. Identify subject areas with low student performance and corresponding teacher proficiency gaps based on the 2023 NAT G12.
2. Design a targeted INSET program to address identified deficiencies.
3. Evaluate the perceived effectiveness of the INSET program in enhancing teaching practices, skill application, and technology integration.
4. Develop an INSET manual or framework responsive to local educational needs, aimed at improving teacher proficiency and student outcomes in Marawi.

These objectives were directly informed by 2023 NAT G12 data from BARMM/Marawi, where Media and Information Literacy (MPS 37.64, Rank 1), Science (MPS 39.97, Rank 2), and Humanities (MPS 40.06, Rank 3) were the three lowest-performing subjects out of seven, with all MPS below 41, highlighting urgent gaps requiring targeted intervention

LITERATURE REVIEW

This chapter provides a comprehensive review of relevant literature and studies, both local and international, which serve as foundational references for the current research. It encompasses key domains such as teacher proficiency, student academic performance, and the design and implementation of teacher training programs. These thematic areas are explored to establish empirical grounding, identify gaps, and inform the conceptual framework and methodological orientation of the study. The goal is to synthesize insights that contribute to the development of effective interventions aimed at improving teacher capacity and learner outcomes, especially in high-stakes national assessments like the National Achievement Test (NAT).

Teacher Proficiency

Teacher proficiency refers to the collective set of knowledge, skills, and dispositions that enable educators to deliver high-quality instruction and facilitate meaningful student learning. According to Albert (2016), teacher proficiency includes not only content mastery and pedagogical competence but also a deep understanding of learner diversity, classroom management strategies, and the ability to adapt instruction to specific contexts. The information, skills, abilities, and attitudes that teachers must possess in order to promote learning processes and

design are referred to as proficiency levels in teaching. In addition, a combination of expert and didactical knowledge, practical teaching experience, learned and practiced skills, insights, and attitudes, particularly with regard to student engagement and the teacher's own position, is essential (Sumalinog, 2022).

In the Philippine context, Amanonce and Maramag (2020) observed that alignment between instructional strategies and the competencies measured in the Licensure Examination for Teachers (LET) enhances the quality of instruction. The study showed that faculty members with strong pedagogical grounding produced graduates with higher LET pass rates, indicating a robust correlation between teacher training and certification performance.

Moreover, Podolsky, Kini, and Darling-Hammond (2019) stress that teachers holding postgraduate degrees often exhibit stronger instructional competencies. This aligns with findings by Imsa-ard (2020), who emphasized that beyond credentials, practical classroom strategies and the use of teaching aids play a crucial role in determining instructional proficiency. This suggests that both formal qualification and classroom application are integral to effective teaching.

Language proficiency and teacher effectiveness. Faez, Karas, and Uchihara (2021), in a meta-analysis, found a moderate positive correlation ($r = .37$) between teachers' language proficiency and their self-efficacy. Meanwhile, Sadeghi, Richards, and Ghaderi (2020) caution that although language proficiency is essential, it is not the sole determinant of effective teaching. They argue that motivation, reflection, and classroom engagement are equally influential.

These findings support the current study's aim of developing a teacher training manual that enhances teacher proficiency, particularly by addressing skill gaps, subject matter knowledge, and pedagogical strategies required in senior high school contexts.

Student Performance

Student academic performance is a critical indicator of the effectiveness of instructional strategies, teacher competence, and institutional support systems. Ullah and Almani (2022) argue that student performance is influenced by several variables such as the availability of instructional materials, teacher-to-student ratio, home support, and learner motivation. They emphasize the interdependence of internal (school-based) and external (home and societal) factors in shaping educational outcomes.

Influence of teaching methodologies. Mlambo (2011) reinforces this by suggesting that students' academic achievements are directly influenced by teaching methodologies and the learning environment. This supports Clay and Breslow's (2006) assertion that student engagement increases when active learning techniques are applied, resulting in better attendance and performance.

Psychosocial and environmental factors. Rogaten et al. (2013) identified that sleep patterns significantly correlate with academic performance. Similarly, Yousuf et al. (2011) noted the role of peer motivation in student success, indicating that academic achievement improves when learners are embedded in peer networks that share academic goals.

Role of teacher quality. The study of Nisha and Neetu (2017) adds another layer, noting that while individual traits like personality and interests matter, teacher quality remains one of the most powerful school-related factors influencing academic success. Their survey results highlighted teaching quality, student study habits, and home conditions as strong predictors of performance.

From the perspective of national-level performance monitoring, this literature provides a theoretical lens through which to analyze low-performing subject areas in the NAT, thereby responding to the first research question of the study.

Teacher Training Programs

Teacher training programs (TTPs) are essential for professionalizing the teaching workforce and addressing emerging educational challenges. These programs range from pre-service certification courses to continuous

professional development (CPD) initiatives. Their impact on both teacher performance and student outcomes has been extensively documented.

Impact on pedagogical competence. Boudersa (2016), as cited by Saeed and Aneesa (2023), argues that TTPs significantly improve teachers' pedagogical content knowledge, professional attitudes, and classroom practices. This is further substantiated by Richards and Farrell (2005), who emphasize that training programs should not merely be informational but must engage teachers in experiential learning, problem-solving, and reflective practices.

Importance of needs assessment. Effective training must also be responsive to the evolving needs of teachers. Moeini (2008) highlights the role of needs assessment in designing training curricula, particularly in integrating Information and Communication Technology (ICT). His study found that when training is customized to the expressed needs of teachers, participation rates and satisfaction levels are markedly higher.

National and international perspectives. In the Philippine education system, Quilapio and Callo (2022) found that in-service training improved teacher motivation, competence, and professional identity. Internationally, Nazar and Nordin (2020) identified a significant performance gap between trained and untrained teachers, particularly in the teaching of English.

Frameworks for high-quality professional development. Darling-Hammond et al. (2017) offered a framework for high-quality teacher professional development consisting of seven features: content focus, active learning, collaboration, modeling of effective practices, coaching and support, feedback and reflection, and sustained duration. Yoon et al. (2007) similarly found that sustained and content-focused PD in literacy and mathematics resulted in significant gains in student achievement.

From a systems perspective, Stevenson et al. (2020) criticized the inconsistency in TTP implementation, particularly in teacher preparation programs that lack alignment with evidence-based practices. Postholm (2012) and Ventista and Brown (2023) likewise highlight the importance of collaborative learning environments in teacher development.

METHODOLOGY

Research Design

This study employed a mixed-methods design integrating quantitative and qualitative approaches (Teddlie and Tashakkori, 2011) to examine the effectiveness of targeted In-Service Training (INSET) programs on teacher proficiency and student performance. Quantitative data from pre- and post-assessments measured changes in teacher knowledge and skills, while qualitative data from semi-structured interviews and focus group discussions captured participants' experiences, perceptions, and contextual insights. The descriptive component documented existing teaching practices and performance gaps revealed by the 2023 National Achievement Test (NAT) G12. This design was selected to allow triangulation, enrich interpretation, and address the study's multidimensional research questions.

The study employed a convergent parallel mixed methods design. This design involves simultaneous collection and separate analysis of quantitative and qualitative data, which are then integrated to provide a comprehensive understanding of the research problem. The two data strands hold equal priority and are merged during interpretation to corroborate and enrich findings, fitting the characteristics described in the study.

Researcher Description

The research team consisted of experienced educators and education researchers with prior exposure to teacher training contexts in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM). Familiarity with the local educational challenges informed instrument development and contextual sensitivity but posed risks of bias. These were mitigated by adhering to standardized protocols, engaging independent validators for instruments, and using anonymized coding in qualitative analysis to preserve objectivity.

Participants and Data Sources

Participants comprised 30 senior high school teachers (12 Science, 12 Humanities, 6 Media & Information Literacy) and six principals from three public and three private schools under the Ministry of Basic, Higher and Technical Education, City Schools Division of Marawi. Teachers had at least two years' experience and taught NAT-covered subjects. Principals provided institutional perspectives on training implementation. Expert lecturers (n=5), each holding a PhD in their specialization, delivered the INSET sessions. This purposive sample ensured representation across priority subject areas and school types, capturing diversity relevant to the study's goals.

Participant Recruitment

Schools were selected based on accessibility and willingness to participate. Principals received formal invitations and nominated eligible teachers according to inclusion criteria (minimum two years teaching experience; handling NAT G12 subjects). Exclusion criteria included probationary teachers and those not assigned to the targeted subject areas. Recruitment was conducted face-to-face through school visits, with informed consent obtained from all participants prior to data collection.

Ethical Considerations

Ethical clearance was secured from Mindanao State University's OVCRED. All participants received study information sheets, and written consent was obtained. Anonymity was maintained via pseudonyms; participation was voluntary with the option to withdraw at any time.

Data Collection and Analysis

Pre- and post-training assessments measured changes in teacher proficiency. Surveys captured quantitative perceptions, while interviews and FGDs explored qualitative themes. Quantitative data were analyzed using descriptive statistics; qualitative data underwent thematic analysis (Braun and Clarke, 2006), supplemented by post hoc thematic coding to identify emergent insights. Triangulation enhanced validity, and findings informed the development of a targeted teacher training manual.

The study employed a rigorous mixed-methods approach combining both quantitative and qualitative data collection procedures to comprehensively evaluate the effectiveness of the In-Service Training (INSET) program among senior high school teachers in the City Schools Division of Marawi. Quantitative data were gathered via structured survey questionnaires and pre- and post-assessment tests specifically aligned with subject areas covered by the National Achievement Test (NAT) G12, including Contemporary Philippine Arts, Earth and Life Science, Physics, 21st Century Literature, and Media and Information Literacy. This allowed measurement of changes in teacher knowledge and skills directly relevant to national academic standards, following the design principles outlined by Teddlie and Tashakkori (2011).

Qualitative data collection involved semi-structured interviews and focus group discussions (FGDs) conducted with both teachers and school principals. These sessions, lasting on average 60 minutes, provided rich narrative insights into pedagogical adjustments, contextual alignment of instruction, and integration of technology and media literacy. This qualitative component was guided by Kvale and Brinkmann's (2009) framework for exploring lived experiences and reflective practice, ensuring that participants could express nuanced perceptions about INSET effectiveness within culturally responsive pedagogy (Gay, 2010) and adult learning theory (Knowles, 1984).

Data collection was conducted over approximately four weeks with sustained participant engagement. All instruments underwent validation by subject matter experts from the Ministry of Basic, Higher and Technical Education–Bangsamoro Autonomous Region in Muslim Mindanao (MBHTE–BARMM), verifying both content validity and theoretical coherence with Guskey's Model of Teacher Change (2002), Kirkpatrick's Four-Level Training Evaluation (1994), and Knowles' Andragogy (1984).

Data analysis employed a dual strategy:

Quantitative data from pre- and post-assessments were analyzed using descriptive statistics (mean scores, frequencies, percentages) to elucidate changes in teacher competencies and perceptions of pedagogical and technological improvement (Creswell, 2014).

Qualitative data were subjected to Braun and Clarke's (2006) six-phase thematic analysis familiarization, coding, theme generation, review, definition, and reporting to systematically identify core themes. A post hoc thematic analysis (Kohrman et al., 2023) further uncovered emergent patterns related to contextualization, active learning, and critical media literacy.

Methodological integrity was ensured through consistent analytic procedures, manual coding by the primary researcher, and secondary review of 20% of transcripts to guarantee interrater reliability (Miles, Huberman, and Saldaña, 2014). Discrepancies were resolved collaboratively to enhance trustworthiness. Credibility was also fortified through member checking (participant validation of summaries), expert auditing by MBHTE–BARMM specialists, and reflexive journaling that documented analytic decisions and contextual insights in compliance with qualitative research ethics (Tufford and Newman, 2012).

Research Ethics

The study adhered to stringent ethical standards guaranteeing participant protection, dignity, and voluntary participation. Ethical clearance was obtained from the Office of the Vice Chancellor for Research, Extension, and Development (OVCRED) of Mindanao State University. Informed consent was secured from all teachers and principals, who were assured of their right to withdraw without penalty. Confidentiality was rigorously maintained through pseudonymization and careful data security. Data collection methods (interviews, recordings, images) were conducted only with explicit permission. The research followed the APA ethical standards (2020), emphasizing beneficence, non-maleficence, respect for persons, and justice, with cultural sensitivity tailored for Marawi's educational context.

Findings: Thematic Analysis

Using Braun and Clarke's (2006) six-phase thematic analysis, the interview transcripts were coded and synthesized to identify patterned meanings across participants. Five major themes emerged, each reflecting the perceived influence of the INSET program on teacher practice, professional identity, and student learning. Occurrence counts (i.e., number of participants whose statements substantively contributed to a theme) are provided to enhance analytic transparency and rigor.

Theme 1: Contextualization and Cultural Relevance

Occurrence: 6 of 8 participants

The first theme highlights teachers' increased use of culturally grounded and contextually relevant instruction. Participants described shifting from generic approaches to lessons that integrated local cultural heritage, community realities, and students lived experiences. For instance, teachers in Contemporary Philippine Arts and Creative Writing reported embedding Marawi cultural elements into discussions and activities, which heightened student enthusiasm and comprehension. School leaders corroborated these observations, noting increased use of contextualized tasks such as composition writing and localized research projects. Overall, contextualization allowed teachers to deliver content that was more relatable, meaningful, and accessible to learners.

Theme 2: Active and Experiential Learning

Occurrence: 8 of 8 participants

Active and experiential learning was the most prevalent theme, mentioned by all participants. Teachers consistently described a pedagogical shift toward student-centered, hands-on, and inquiry-driven activities

following the INSET training. Participants implemented project-based learning, collaborative work, experiments, digital simulations, and performance-based tasks that promoted exploration and authentic learning. School administrators confirmed these observations, citing increased student curiosity, creativity, and class participation across subjects. In Science, hands-on experiments and model-building activities made abstract concepts more concrete, while in Arts and Humanities, collaborative outputs fostered creativity and deeper engagement. This widespread adoption demonstrates that experiential learning became a core instructional advancement resulting from the program.

Theme 3: Digital and Critical Media Literacy

Occurrence: 6 of 8 participants

The third theme reflects expanded use of educational technologies and media literacy strategies. Teachers reported integrating ICT not merely as a tool for delivering content but as a platform for creating media, facilitating collaboration, and promoting critical analysis. Examples included multimedia presentations, virtual labs, educational games, and student-generated digital outputs. School heads emphasized that digital tools increased students' engagement and provided access to instructional resources beyond the physical classroom. Teachers thus moved toward more interactive, media-enriched learning environments that supported both content mastery and 21st-century skills.

Theme 4: Teacher Confidence and Professional Growth

Occurrence: 7 of 8 participants

Most teachers described enhanced confidence, self-efficacy, and professional identity as key outcomes of the training. Participants attributed this growth to their improved mastery of differentiated instruction, formative assessment, technology integration, and strategies for simplifying complex topics. Several teachers shared that the training empowered them to manage diverse learners more effectively through scaffolding and personalized support. School heads validated this observed growth, reporting noticeable improvements in teacher initiative, creativity, and consistency in applying innovative instructional methods. The strengthened professional identity served as both a catalyst for change and a sustaining factor in implementing new practices.

Theme 5: Barriers and Sustainability Challenges

Occurrence: 7 of 8 participants

Despite substantial instructional improvements, participants identified persistent barriers that may limit the long-term sustainability of training outcomes. These included (a) limited ICT and laboratory resources, (b) heavy teacher workload and one-hour class time constraints, (c) subject assignments outside teachers' specialization, and (d) insufficient coverage of certain subject areas during training. Teachers noted that scarce equipment, such as projectors or laboratory materials, sometimes hindered the execution of hands-on activities. School administrators echoed these concerns, citing shortages in staffing, financial limitations, and the need for extended or more specialized training. These constraints suggest that sustained implementation depends not only on teacher capacity but also on institutional support and resource availability.

BARMM NAT subject trend

The chart plots each subject on the x-axis (Media and Information Literacy, Science, Humanities, Social Science, Mathematics, Language and Communication, Philosophy) with two bars per subject, one for Average MPS and one for Ranking. The blue bars show that Average MPS increases from 37.64 in Media and Information Literacy up to 50.32 in Philosophy, while the orange bars show the corresponding rankings from 1 (best) to 7 (lowest) in the same subject order.

Subject	Average MPS	Ranking (1 = lowest performance; 7 = highest)
Media and Information Literacy	37.64	1
Science	39.97	2
Humanities	40.06	3
Social Science	43.77	4
Mathematics	45.61	5
Language and Communication	47.85	6
Philosophy	50.32	7

Figure 1. Trend of BARMM Grade 12 NAT Average MPS and Ranking across subjects.

Figure 1 presents the 2023 Grade 12 NAT average Mean Percentage Scores (MPS) and corresponding rankings across seven subjects in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), with specific relevance to the City Schools Division of Marawi. The subjects are ordered from lowest to highest MPS: Media and Information Literacy (MPS = 37.64, Rank 1), Science (MPS = 39.97, Rank 2), Humanities (MPS = 40.06, Rank 3), Social Science (MPS = 43.77, Rank 4), Mathematics (MPS = 45.61, Rank 5), Language and Communication (MPS = 47.85, Rank 6), and Philosophy (MPS = 50.32, Rank 7).

Figure 1 shows the ascending MPS trend, confirming the lowest performance in the INSET-targeted subjects (Media and Information Literacy, Science, and Humanities), which qualitative data suggests were effectively addressed through enhanced pedagogical strategies such as contextualization and cultural relevance, active and experiential learning, and digital and critical media literacy.

Higher MPS in non-targeted subjects (particularly Philosophy, Language and Communication, and Mathematics) correspond with the thematic finding of Barriers and Sustainability Challenges, where participants noted limited training coverage, resource constraints, and assignment of teachers outside their specialization—factors that likely contributed to sustained performance differences.

This alignment between the NAT performance gaps and the emergent qualitative themes underscores the targeted design of the INSET program and provides evidence that reported improvements in teacher practice directly responded to the most pressing divisional needs.

Convergence of the NAT Trend and the Thematic Findings

The convergence of the NAT trend and the thematic findings indicates that the INSET program was appropriately targeted at the lowest-performing subject areas in BARMM Grade 12 (Media and Information Literacy: MPS 37.64, Rank 1; Science: 39.97, Rank 2; Humanities: 40.06, Rank 3—where Rank 1 denotes the lowest performance). Qualitative themes such as Digital and Critical Media Literacy, Active and Experiential Learning, and Contextualization and Cultural Relevance directly addressed the pedagogical gaps contributing to these low scores. In contrast, higher-performing subjects (e.g., Philosophy: MPS 50.32, Rank 7) received less emphasis in the training, which aligns with their relatively stronger NAT results. This alignment between the identified performance gaps, targeted training focus, and reported teacher improvements provides evidence that the INSET program effectively responded to divisional needs.

DISCUSSION

The present study advances the discourse on teacher professional development by addressing the critical nexus

between teacher proficiency and student outcomes, particularly in conflict-affected and resource-constrained settings like Marawi City. Education serves as a cornerstone for national development, fostering human capital formation, innovation, and social progress (World Bank, 2020). Within this framework, teachers are pivotal agents, shaping student learning experiences and achievement. The documented underperformance of senior high school students in the 2023 National Achievement Test (NAT) G12, especially in Media and Information Literacy and Science, underscores substantive gaps in instructional quality and pedagogical effectiveness in the City Schools Division of Marawi. This situational analysis provides a compelling impetus for targeted teacher training interventions that are both context-sensitive and evidence-based.

The theoretical underpinnings of this research are robustly framed by Guskey's Model of Teacher Change (2002), Kirkpatrick's Four-Level Training Evaluation Model (1994), and Knowles' Adult Learning Theory (Andragogy, 1984). Guskey's model provides a comprehensive lens for understanding teacher change as a multifaceted process requiring cognitive, emotional, and behavioral transformations, emphasizing the importance of sustained self-efficacy and continuous feedback to achieve meaningful, lasting professional growth. This conceptualization aligns with the study's objective to cultivate teacher confidence and capacities through the In-Service Training (INSET) program, designed to facilitate the progression from awareness to maintenance of enhanced teaching practices in Marawi's unique socio-cultural context.

Complementing this, Kirkpatrick's model offers an evaluative framework essential for multi-layered assessment of training efficacy, encompassing reaction, learning, behavior, and results (organizational outcomes). This allows for a nuanced analysis beyond immediate knowledge gains, extending to changes in classroom behavior and, ultimately, improved student performance as reflected in standardized assessments like the NAT. The integration of Kirkpatrick's model ensures that training interventions are not merely informational but transformative, resonating with organizational goals and educational equity imperatives in marginalized settings.

Knowles' Adult Learning Theory (Andragogy) undergoes the pedagogical approach of the training program, emphasizing adults' need for self-directed, experiential, and problem-centered learning that respects the wealth of prior experience and intrinsic motivation adult learners bring. This theory justifies the design of INSET sessions that are interactive, reflective, and contextually relevant, facilitating immediate applicability to teachers' daily instructional challenges. By privileging adult learners' autonomy and practical engagement, the program fosters deeper professional commitment and promotes sustained instructional innovation.

Empirical literature reinforces the pertinence of these theoretical foundations. Research identifies teacher proficiency characterized by content mastery, pedagogical skill, and the ability to adapt instruction as a primary determinant of student achievement (Albert, 2016; Podolsky et al., 2019). Moreover, professional development initiatives that incorporate active learning, collaboration, coaching, and curriculum alignment have been shown to produce significant gains in both teacher effectiveness and student outcomes (Darling-Hammond et al., 2017; Yoon et al., 2007). The contextual challenges of Marawi, including post-conflict recovery, limited resources, and socio-economic constraints, necessitate localized adaptations of these frameworks to ensure inclusivity and relevance.

In this study, the alignment between identified NAT performance gaps and the tailored INSET modules reflects informed responsiveness to specific pedagogical deficiencies. This bridging of theory and empirical data facilitates a feedback loop where training content addresses evolving instructional realities, and teacher reflections guide iterative program refinement. The conceptual framework operationalizes this dynamic as an interdependent system where student performance, teacher training, and educational leadership coalesce to drive continuous improvement.

In sum, this research contributes to educational scholarship by offering an integrated, theory-driven, and evidence-informed model of teacher development tailored for complex, underserved educational environments. The findings are expected to inform policymakers, educational administrators, curriculum developers, and frontline educators in the City Schools Division of Marawi, thereby advancing the agenda of sustainable educational recovery and excellence.

CONCLUSION

The study revealed that student performance in the 2023 National Achievement Test (NAT) G12 within the City Schools Division of Marawi was notably low, particularly in Media and Information Literacy (MPS 37.64), Science (MPS 39.97), and Humanities (MPS 40.06)—the three lowest-ranking subjects in BARMM. The implementation of the targeted In-Service Training (INSET) program resulted in marked improvements in teachers' pedagogical practices, confidence, and technology integration, with a clear shift toward more learner-centered, contextualized, and skills-based approaches. The lowest MPS in these targeted subjects justifies the INSET focus, and the post-training enhancements in relevant pedagogical strategies offer promising potential for closing these performance gaps. While notable gains were observed, challenges such as limited resources and the need for sustained support remain. Overall, the study demonstrates that a well-designed, contextually responsive teacher training program can significantly enhance instructional quality and contribute to improving student academic outcomes in priority subject areas.

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