Investing in Sustainable Futures: Analyzing the Pre-Service Teacher Gap as a Barrier to Quality Education SDG 4.c in Masbate, Philippines

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ABSTRACT	Published Online: January 10, 2026

This study analyzes the pre-service teacher gap as a systemic barrier to achieving Sustainable Development Goal (SDG) 4, Target 4.c, in the geographically disadvantaged context of Masbate, Philippines. It investigates the disconnect between teacher preparation and the realities of Geographically Isolated and Disadvantaged Area (GIDA) schools. An explanatory sequential mixed-methods design was employed. A census survey (n=312) of fourth-year pre-service teachers in a Masbate state college measured career commitment, self-efficacy, and training perceptions. Subsequent focus group discussions and interviews with purposefully sampled participants provided qualitative depth. Data were analyzed using regression and thematic analysis. Quantitative results revealed a critical gap, while 68.3% of pre-service teachers were of rural Masbate origin, only 41.7% intended to teach in local GIDA schools. Regression analysis identified contextualized teaching self-efficacy (β = .51, p < .001) and a rural practicum experience as the strongest predictors of GIDA commitment, whereas financial scholarships showed no significant effect. Qualitative findings exposed a training-practice disconnect, where generic methodology courses failed to prepare candidates for multi-grade teaching and resource scarcity, with practicum quality acting as a decisive psychosocial intervention. The barrier to quality education in Masbate is a qualitative pre-service gap, not a numerical shortage. Investment must shift from financial incentives to transforming teacher education. A strategic framework is proposed, mandating contextualized practicum standards, building pre-service self-efficacy, and establishing a multi-sectoral teacher pipeline compact to cultivate a sustainable, committed, and GIDA-qualified teaching workforce.

KEYWORDS:
SDG 4, Geographically isolated and disadvantaged areas (GIDA), Pre-service teachers, Self-efficacy

1. INTRODUCTION

The pursuit of Sustainable Development Goal 4 (SDG 4), to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030, faces its most significant test in marginalized and geographically challenging regions (UN, 2015). The quality of education is inextricably linked to the quality of teachers, making Target 4.c, which aims to "substantially increase the supply of qualified teachers," a critical linchpin for the entire goal (UNESCO, 2016).

However, global evidence indicates a persistent crisis in teacher supply and distribution, characterized not merely by numerical shortages but by a qualitative gap where teachers are often unprepared for or unwilling to serve in the most disadvantaged schools (Bourgonje, 2010; UNESCO, 2023). This gap between teacher preparation and the realities of challenging classrooms undermines educational equity and threatens the foundational principle of SDG 4 to "leave no one behind."

Within the Philippines, the challenge of equitable teacher distribution is acute. The national education system contends with a stark disparity between urban centers and rural, geographically isolated and disadvantaged areas (GIDA). Research confirms that rural and remote schools consistently struggle with higher teacher vacancy rates, attrition, and difficulties in attracting qualified applicants (Alba & Adeyapa, 2021; Bernardo, 2021). This creates a

cyclical barrier to quality education, where the schools and learners with the greatest needs have the least access to sustained, effective teaching.

While national policies and scholarship programs aim to address numerical supply, a critical, underexplored lever lies at the source: the pre-service teacher pipeline. The preparedness, motivation, and career intentions of teacher candidates before they enter the profession are decisive factors for future retention and effectiveness in GIDA settings (Heinz, 2015; Ronfeldt & Reininger, 2012).

Focusing on pre-service teachers is particularly salient for island provinces like Masbate. Characterized by a dispersed archipelago geography and persistent socioeconomic challenges, Masbate exemplifies the context where SDG 4 is most at risk. Its public schools, especially in isolated coastal and island communities, require a steady, committed, and contextually prepared teaching force.

Local teacher education institutions (TEIs) are the primary suppliers of this workforce. Yet, it remains unclear to what extent these institutions are successfully cultivating a pipeline of educators who are not only qualified by certification but are also ready, willing, and likely to remain in Masbate's most challenging classrooms. This constitutes a critical "pre-service teacher gap", a disconnect between training outcomes and local system needs that acts as a fundamental barrier to educational sustainability in the province.

Existing literature has documented in-service teacher challenges in the Philippines (Orbeta & Paqueo, 2021) and the broad trends in teacher education. However, a significant research gap exists in localized, diagnostic studies that specifically analyze the pre-service stage as a strategic intervention point for achieving Target 4.c in specific GIDA contexts. There is a lack of empirical data on career intentions, self-efficacy for rural teaching, and perceived preparedness of Masbate's own teacher candidates. Without this evidence, investments in teacher development may be misaligned, and policies aimed at retention may address symptoms rather than root causes.

Therefore, this study aims to conduct a focused analysis of the pre-service teacher gap in Masbate Province as a systemic barrier to SDG 4 Target 4.c. It seeks to describe the current supply pipeline from local TEIs, identify key disconnects between training and reality, measure commitment to GIDA service, and evaluate the adequacy of practice-based training.

Ultimately, by diagnosing this gap, the research intends to develop a strategic framework for appropriate investment in the pre-service pipeline. The findings are poised to inform provincial education planners, TEI administrators, and policymakers on how to transform teacher preparation into a sustainable engine for achieving quality education for all of Masbate's learners, offering a replicable model for similar marginalized contexts globally.

II. METHODS

This study employed an explanatory sequential mixed-methods design to analyze the pre-service teacher gap in Masbate Province. The research was conducted with the Bachelor of Elementary (BEED), Secondary (BSEd), Early Childhood (BECED), Technology and Livelihood (BTLEd), and Physical (BPEd) Education students, the entire graduating cohort, in a state college in Masbate Province. The first quantitative phase used a census approach, meaning all eligible fourth-year students were invited to participate, to ensure a comprehensive profile of the pre-service teacher supply.

A structured questionnaire was administered to this entire cohort to map the supply pipeline, measure career commitment to geographically isolated and disadvantaged areas (GIDA), assess teaching self-efficacy, and evaluate perceived training adequacy. The questionnaire, validated by experts and piloted with 30 students from a non-participating institution, demonstrated high internal consistency, with a Cronbach's alpha of 0.87 for the career commitment scale and 0.85 for the self-efficacy scale, indicating strong reliability.

Following quantitative analysis, the second qualitative phase was designed to explain the initial findings. Participants were purposefully sampled from the survey respondents based on their commitment levels and self-efficacy scores. Data were collected through semi-structured interviews and focus group discussions, conducted in English and local languages, which explored the reasons behind career intentions, reflections on practice teaching, and perceptions of the profession in Masbate. These sessions continued until thematic saturation was reached.

Quantitative data were analyzed using descriptive and inferential statistics, including frequencies, means, and regression analysis, to describe the pre-service teacher profile, measure commitment and self-efficacy, and identify key predictors of GIDA service intention. Qualitative data underwent thematic analysis, where transcripts were systematically coded to identify patterns and themes that explained the statistical relationships and provided depth to the evaluation of training adequacy.

The two strands of data were then integrated. The broad patterns from the survey were interpreted and illuminated by the rich, contextual narratives from the interviews and discussions. This merged understanding directly informed the development of an evidence-based strategic framework, translating diagnostic findings into actionable recommendations for teacher education institutions and provincial policymakers.

Ethical protocols were strictly followed, including approval from the relevant research institutional permissions. Written informed consent was obtained from all participants, with assurances of voluntariness, confidentiality, and secure data handling throughout the study.

III. RESULTS AND DISCUSSIONS

This integrated section presents the study's findings, beginning with key quantitative results presented in tabular form, followed by a discussion that contextualizes these outcomes within the specific empirical landscape of Masbate and the broader discourse on SDG 4.

Quantitative Profile and Predictors of GIDA Commitment

The census survey of 312 fourth-year pre-service teachers in the College of Education in a state college in Masbate provided a definitive profile of the local supply pipeline. A significant majority (68.3%) were of rural Masbate origin, yet as shown in Table 1, only 41.7% expressed firm intention to seek teaching positions in the province's GIDA schools. This immediate disconnect between local origin and local commitment underscores a critical leakage in the human resource pipeline for education.

Table 1. Career Intentions of Pre-Service Teachers; (N=312)

Career Intention Post-Graduation	Frequency (n)	Percentage (%)
Apply to teach in Masbate GIDA schools	130	41.7
Apply to teach in Masbate urban/central schools only	98	31.4
Seek teaching employment outside Masbate	72	23.1
Pursue a non-teaching career	12	3.8

To diagnose this gap, a regression analysis identified the factors predicting commitment to GIDA service. The model ($R^2 = .39$) revealed that the strongest predictor was not financial incentive, but contextualized teaching self-efficacy ($\beta = .51$, $p < .001$). As detailed in Table 2, completing a practicum in a rural Masbate school was also a significant positive predictor, whereas being a recipient of a government scholarship bond (e.g., CHED Scholarship) showed no statistically significant effect on GIDA commitment.

Table 2. Predictors of Commitment to Teach in Masbate GIDA Schools

Predictor Variable	β Coefficient	p-value	Interpretation
Contextualized Teaching Self-Efficacy	0.51	<0.001	Strong positive predictor
Rural Masbate Origin	0.18	0.012	Moderate positive predictor
Completed Rural Practicum in Masbate	0.24	0.003	Significant positive predictor
Government / Non Government Scholarship	0.07	0.215	Not a significant predictor
Family Socioeconomic Status	-0.11	0.058	Marginal negative association (not significant

This empirical finding from Masbate directly challenges a prevalent policy assumption that financial tie-ins alone secure teacher placement in difficult areas. Instead, it aligns with emerging Philippine research, such as that by Bernardo et al. (2022), which found that early, positive exposure to rural teaching contexts builds a professional identity aligned with public service in marginalized areas. Our data suggest that in Masbate's context, a sense of professional capability forged through relevant experience is a more powerful driver of commitment than contractual obligation.

The Empirical Reality of the Training-Practice Disconnect

The qualitative findings provide the necessary depth to explain these statistical relationships, grounding them in the lived experiences of pre-service teachers. Thematic analysis of interviews and FGDs revealed a pronounced disconnect between the training received and the empirical realities of Masbate's classrooms. Participants frequently described their methodology courses as "generic" and "based on textbooks with full facilities."

In contrast, their practicum experiences in GIDA schools, often described as "culture shock", involved managing three grade levels in one room, using self-made visual aids due to a lack of printers, and navigating lessons amid frequent weather-induced class cancellations.

This dissonance created two distinct trajectories. Those who reported high self-efficacy and commitment, like one participant from Dimasalang, narrated how a supportive cooperating teacher explicitly mentored them in "improvisation and community rapport," transforming the practicum from a hurdle into a source of empowerment.

Conversely, those with low commitment, often from urban Masbate or other municipalities, described feeling "abandoned" and "professionally unprepared," with their practicum reinforcing a desire to seek work in "more organized" schools elsewhere. This empirical pattern confirms that the quality and mentorship structure of the rural practicum is not just an academic requirement but a decisive

psychosocial intervention that can either anchor or alienate future teachers (Kumar & Ratnam, 2021).

In Masbate's case, where official reports indicate that a significant majority of schools are in rural and geographically challenged areas (DepEd Masbate, 2023), this variability in practicum quality represents a systemic risk.

Contextualizing the Gap within SDG 4.c and a Strategic Path Forward

The integrated results frame the pre-service teacher gap in Masbate not as a simple shortage, but as a systemic failure to contextualize teacher education, a direct impediment to achieving SDG Target 4.c. The target's call for "qualified teachers…especially in least developed countries" must be interpreted in Masbate's context as requiring GIDA-qualified teachers. This study empirically demonstrates that current pre-service training, while producing legally qualified graduates, often fails to instill the specific competencies and mind-set required for GIDA qualification.

Therefore, the proposed strategic framework must be empirically grounded.

First, Mandatory Contextualized Practicum Standards must be co-developed by TEIs and the Schools Division Office of Masbate, ensuring every practicum includes structured mentorship in multi-grade teaching and community engagement.

Second, investment must shift toward Efficacy-Building Interventions, such as pre-practicum simulation labs using local case studies, to build the self-efficacy identified as the key predictor of commitment.

Finally, a Masbate Teacher Pipeline Compact is needed, a formal agreement between TEIs, the provincial LGU, and the DepEd to track graduates, offer necessary induction support for those in GIDA schools, and provide locally tailored incentives, such as preferential promotion pathways or housing support, that address the unique logistical challenges of island municipalities.

This study provides empirical evidence from Masbate that the path to achieving SDG 4 runs directly through the transformation of pre-service teacher education. By closing the contextual gap between training and reality, stakeholders can convert the latent potential of locally rooted pre-service teachers into a sustainable, committed, and effective workforce. This is not merely an educational reform but a necessary investment in the province's social and economic future, ensuring that the universal right to quality education is fulfilled even in its most remote and marginalized communities.

IV. CONCLUSIONS

This study conclusively demonstrates that the barrier to achieving SDG 4 Target 4.c in Masbate Province is not a simple numerical teacher shortage but a profound qualitative gap at the pre-service stage. The empirical data reveal a critical disconnect between the supply of locally originated teacher graduates and their commitment to serve in the province's GIDA schools. The strongest predictor of this commitment is not financial incentive but a robust sense of self-efficacy, specifically forged through high-quality, contextualized practicum experiences. The findings indicate that the current teacher education curriculum, while producing legally qualified graduates, often fails to equip them with the specific competencies and resilient mindset required for the realities of multi-grade, resource-constrained, and geographically isolated classrooms. This misalignment represents a systemic failure to cultivate a sustainable, homegrown teaching workforce, thereby perpetuating the cycle of educational inequity in one of the Philippines' most marginalized regions.

V. RECOMMENDATIONS

To realize these significant findings into sustainable action, the following recommendations are proposed:

1. Mandate the integration of GIDA-specific competencies, such as multi-grade pedagogy, community-based teaching, and contextualized material development, into the core Bachelor of Education programs. This should be coupled with the development of Mandatory Contextualized Practicum Standards, co-created with DepEd Masbate, to ensure every student teaching placement includes structured mentorship and explicit training in addressing local challenges.

2. Invest in pre-service teacher resilience by establishing simulation labs or micro-teaching sessions that use authentic case studies from Masbate's GIDA schools. Implement structured mentorship programs that pair pre-service teachers with exemplary "Master Teachers" from rural schools to build professional identity and self-efficacy before graduation.

3. Establish a formal governance council comprising DepEd-Masbate, provincial LGU, and local TEIs. This body should co-manage the practicum pipeline, track graduate employment, and develop a Strategic Induction and Support System for new teachers deployed to GIDA schools, pairing them with mentors and peer support networks.

4. Move beyond generic financial bonds. Design incentive packages that address the documented logistical and professional isolation challenges in GIDA areas. These could include prioritized access to professional development, housing support or subsidies in island municipalities, reliable internet connectivity for teachers, and clear, accelerated promotion pathways for demonstrated service and innovation in rural education.

5. Conduct longitudinal studies to track the career paths of this cohort of pre-service teachers, measuring the long-term impact of enhanced practicum experiences on actual retention rates.

6. Undertake a comparative policy analysis to examine the effectiveness of the proposed "Pipeline Compact" model against other teacher deployment and retention schemes in similar GIDA contexts across the Philippines.

VI. ACKNOWLEDGMENTS

VII. DISCLOSURE

The authors report no conflicts of interest in this work. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The views expressed in this article are solely those of the authors and do not necessarily represent the official position of their affiliated institutions.

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