



The Quest for Excellence of Aklan Ten Outstanding Mentors in Mathematics: A Collective Case Study

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ABSTRACT

This study investigated the professional characteristics, teaching practices, and journeys of the Aklan Ten Outstanding Mentors in Mathematics to understand what makes them exemplary educators. Despite extensive research on effective math teaching components like pedagogical content knowledge and differentiated instruction, gaps remain in integrating how personal motivations, professional journeys, and contextual challenges in rural Philippine settings shape enduring excellence. Using a collective case study design grounded in post-positivist and social constructivist perspectives, the research explored how these mentors inspire learners, apply creative instructional strategies, and navigate professional challenges. Three awardees were selected as subjects. Data were collected via semi-structured interviews, classroom observations, and document analysis over 10 months. Thematic analysis using in vivo coding revealed five key themes: (1) use of student-centered and engaging teaching strategies; (2) strong commitment to professional growth and leadership; (3) active involvement in mentorship and collaboration; (4) application of real-world contexts in teaching mathematics; and (5) culturally responsive and inclusive practices. The study concludes that excellent math teachers not only enhance student learning but also lead transformative practices within the profession. These findings explain the importance of institutional support for professional development, mentoring, and teacher recognition to sustain quality mathematics education and foster a culture of excellence and inclusivity in schools.

Keywords: outstanding mentors, mathematics teaching, excellence, collective case study, professional growth

ABSTRAK

Studi ini meneliti karakteristik profesional, praktik pengajaran, dan perjalanan Sepuluh Mentor Matematika Teladan Aklan untuk memahami apa yang menjadikan mereka pendidik teladan. Meskipun terdapat penelitian ekstensif tentang komponen pengajaran matematika yang efektif seperti pengetahuan konten pedagogis dan pembelajaran berdiferensiasi, masih terdapat kesenjangan dalam mengintegrasikan bagaimana motivasi pribadi, perjalanan profesional, dan tantangan kontekstual di lingkungan pedesaan Filipina membentuk keunggulan yang berkelanjutan. Dengan menggunakan desain studi kasus kolektif yang berlandaskan perspektif post-positivis dan konstruktivis sosial, penelitian ini mengeksplorasi bagaimana para mentor ini menginspirasi peserta didik, menerapkan strategi pengajaran kreatif, dan mengatasi tantangan profesional. Tiga penerima penghargaan dipilih sebagai subjek. Data dikumpulkan melalui wawancara semi-terstruktur, observasi kelas, dan analisis dokumen selama 10 bulan. Analisis tematik menggunakan pengkodean in vivo mengungkapkan lima tema utama: (1) penggunaan strategi pengajaran yang berpusat pada siswa dan menarik; (2) komitmen yang kuat terhadap pertumbuhan profesional dan kepemimpinan; (3) keterlibatan aktif dalam bimbingan dan kolaborasi; (4) penerapan konteks dunia nyata dalam pengajaran matematika; dan (5) praktik yang responsif secara budaya dan inklusif. Studi ini menyimpulkan bahwa guru matematika yang unggul tidak



hanya meningkatkan pembelajaran siswa tetapi juga memimpin praktik transformatif dalam profesi. Temuan ini menjelaskan pentingnya dukungan institusional untuk pengembangan profesional, pendampingan, dan pengakuan guru untuk mempertahankan pendidikan matematika berkualitas dan menumbuhkan budaya keunggulan dan inklusivitas di sekolah.

Kata kunci: mentor unggul, pengajaran matematika, keunggulan, studi kasus kolektif, pertumbuhan profesional

INTRODUCTION

Excellence in mathematics teaching goes beyond transmitting knowledge. It transforms confusion into confidence. It ignites a lifelong passion for the subject amid diverse learner needs. Central to this pursuit is pedagogical content knowledge. Pedagogical content knowledge empowers educators to anticipate misconceptions. It helps them convey abstract concepts in relatable ways through multiple representations. It fosters deep conceptual understanding over rote procedural fluency (Shulman, 1986; Hiebert, 2007; Rittle-Johnson, 2017).

Sustaining excellence requires several elements. These include differentiated instruction tailored to individual readiness, interests, and styles. Effective classroom management involves clear expectations, positive relationships, and proactive interventions. Teachers must set high yet supported expectations to promote growth mindsets. They provide meaningful, timely feedback. Engaging strategies like inquiry-based, problem-based, and collaborative learning are key. Culturally responsive pedagogy validates diverse backgrounds. Technology integration uses tools such as GeoGebra, artificial intelligence tutors, and adaptive platforms. Reflective practices support continuous improvement (Tomlinson, 2014; Marshall, 2016b; Boaler, 2016; Gay, 2018; Ali et al., 2023). Despite research on these components, limited integration exists of how personal motivations, professional journeys—from foundational training through mentorship, collaboration, and resilience against burnout—and contextual challenges shape enduring effectiveness (Desimone, 2009; Schön, 2017; Hammond, 2015).

While studies highlight individual aspects of math teaching excellence, few explore how these integrate in real-world, resource-constrained settings like rural Philippines (Desimone, 2009). This gap leaves educators without holistic models for sustained impact. Showcasing Aklan Ten Outstanding Mentors teachers addresses this by providing grounded examples of excellence. These awardees demonstrate how to navigate local challenges, such as limited resources and diverse student backgrounds. Their stories offer transferable insights for professional development programs. They inspire systemic changes in teacher recognition and support, ultimately elevating mathematics education quality nationwide.

In the Philippines, the Aklan Ten Outstanding Mentors Awards exemplify such excellence. Inaugurated in 2014 by Department of Education Aklan Division and the Razon Tumbocon-Haresco Foundation under former Congressman Teodorico T. Haresco Jr. and Governor Florencio T. Miraflores, this annual accolade honors educators for teaching excellence, educational leadership, and community service. The rigorous selection process involves document evaluation and interviews/demonstrations (Schools Division Office of Aklan, 2023). Aklan Ten Outstanding Mentors

awardees embody professional characteristics like accountability, ethical behavior, emotional intelligence, intentionality, and lifelong learning. These align with Marshall's (2016b) seven classroom-tested practices: effective management, high expectations, supportive environments, purposeful instruction, meaningful feedback, student engagement, and reflection (Darling-Hammond, 2012; Hattie & Timperley, 2007).

This collective case study addresses the integration gap by exploring excellence pursuit among Aklan Ten Outstanding Mentors in Mathematics awardees. Guided by post-positivist epistemology—acknowledging contextual influences, researcher subjectivity, and multiple interpretations via rigorous triangulation (Harrison et al., 2017; Cruickshank, 2011)—and social constructivist theory, viewing knowledge as constructed through interactions and cultural contexts (Jafari Amineh & Davatgari Asl, 2015), it employs interviews, observations, document analysis, and reflective journals for holistic insights.

Specifically, it answers: (1) What professional characteristics define Aklan Ten Outstanding Mentors awardees' quest? (2) What comprises their professional journeys, including passion cultivation, mathematical thinking development via visible routines and standards from the National Council of Teachers of Mathematics, accessibility through Universal Design for Learning and Reggio Emilia approaches, confidence-building, collaboration and coaching, impact and advocacy, challenge navigation (for example, math anxiety via specific feedback, inclusivity via culturally responsive teaching), and lifelong learning? (3) What teaching practices underpin excellence, emphasizing mathematical practices (inquiry, modeling, communication), culturally responsive teaching, technology, collaboration, formative assessment for differentiation, and conceptual prioritization (National Council of Teachers of Mathematics, 2000; Berger; Center for Applied Special Technology, 2011; Van de Walle et al., 2022)?

Assumptions encompass intrinsic and extrinsic motivations (passion, responsibility); challenges (workloads, resources, conflicts) managed via networks, self-care, reflection; findings' transferability beyond Aklan; ethical protections (consent, confidentiality, cultural sensitivity).

These contributions ultimately include guiding teachers' strategies and mindsets; inspiring students' resilience and appreciation for science, technology, engineering, and mathematics; informing administrators' programs and policies; empowering parents via involvement; shaping policymakers' talent initiatives; aiding local government units' partnerships; providing researchers foundations for cross-disciplinary excellence inquiries. Illuminating Aklan Ten Outstanding Mentors awardees' intertwined traits, journeys, and practices fosters ecosystems empowering educators and learners, ensuring mathematics as discovery and success.

METHOD

This study employed a qualitative collective case study design to explore the pursuit of excellence among the Aklan Ten Outstanding Mentors in Mathematics awardees. Collective case study methodology, as articulated by Stake (1995) and Yin (2014), is particularly suited for in-depth investigation of a phenomenon—here, sustained teaching excellence—across multiple bounded

cases within their real-world contexts. This approach allowed for rich, contextualized insights into how professional characteristics, journeys, and teaching practices converge to foster exceptional mathematics education. By selecting multiple Aklan Ten Outstanding Mentors awardees as cases, the study facilitated cross-case analysis to identify common patterns, unique variations, and transferable principles. It acknowledged the bounded nature of each teacher's professional context in Aklan, Philippines.

The design was guided by post-positivist epistemology. This recognizes an objective reality shaped by contextual factors and researcher subjectivity. It emphasizes rigorous methods, triangulation, and critical reflexivity to enhance credibility (Cruickshank, 2011; Harrison et al., 2017). Complementing this, social constructivism served as the theoretical lens. This posits that knowledge and excellence in teaching are co-constructed through social interactions, cultural influences, and shared experiences with students, colleagues, and communities (Vygotsky, 1978; Jafari Amineh & Davatgari Asl, 2015). This dual perspective ensured a balanced examination: post-positivism provided methodological rigor and acknowledgment of multiple truths. Social constructivism illuminated the relational and contextual construction of teaching expertise.

The study was interpretive and exploratory. It focused on "how" and "what" questions rather than causal relationships. This aligned with qualitative paradigms that prioritize depth over generalizability (Creswell & Poth, 2018). Ethical considerations were paramount. The study adhered to institutional review board guidelines from the researcher's affiliated university and Department of Education protocols. These included informed consent, voluntary participation, confidentiality (via pseudonyms), and cultural sensitivity to Filipino educational norms.

The study was conducted in the Province of Aklan, Western Visayas, Philippines, within public secondary schools under the Department of Education Aklan Division. Aklan is a predominantly rural and coastal province. It features diverse socioeconomic contexts, including fishing communities, tourism-influenced areas, and agricultural zones. These influence classroom dynamics such as resource availability and student backgrounds. Data collection occurred from June 2023 to March 2024, spanning approximately 10 months. This duration allowed for multiple observations across school terms and award cycles. It also accommodated scheduling around school calendars, typhoon seasons, and participant availability. Specifically, 3 months were allotted for semi-structured interviews (June-August 2023), 4 months for classroom observations (September-December 2023), 2 months for document analysis (January-February 2024), and 1 month for member checking and follow-ups (March 2024).

Participants were purposively selected from Aklan Ten Outstanding Mentors in Mathematics awardees (2014–2024 cohorts), ensuring information-rich cases (Patton, 2015). Criteria included: (a) receipt of the Aklan Ten Outstanding Mentors award in Mathematics Secondary Level; (b) at least 5 years of teaching experience to capture sustained excellence; (c) active involvement in mentoring or leadership; and (d) willingness to participate. From an initial pool of 12 eligible awardees identified via Department of Education records and the Razon Tumbocon-Haresco Foundation, three teachers (two males, one female; age range 35–55; teaching experience 15–30 years) were selected to achieve variation in school location (urban/rural), grade levels taught (Grades 7–10), and award

years. This sample size balanced depth with feasibility, allowing bounded cases while enabling thematic saturation (Guest et al., 2006). Pseudonyms protected identities.

The study followed five main stages: exploration, data collection, data analysis, verification, and presentation, as illustrated in Figure 1 based on the models of Stake (1995) as cited by Parreño & Lapinid (2023).

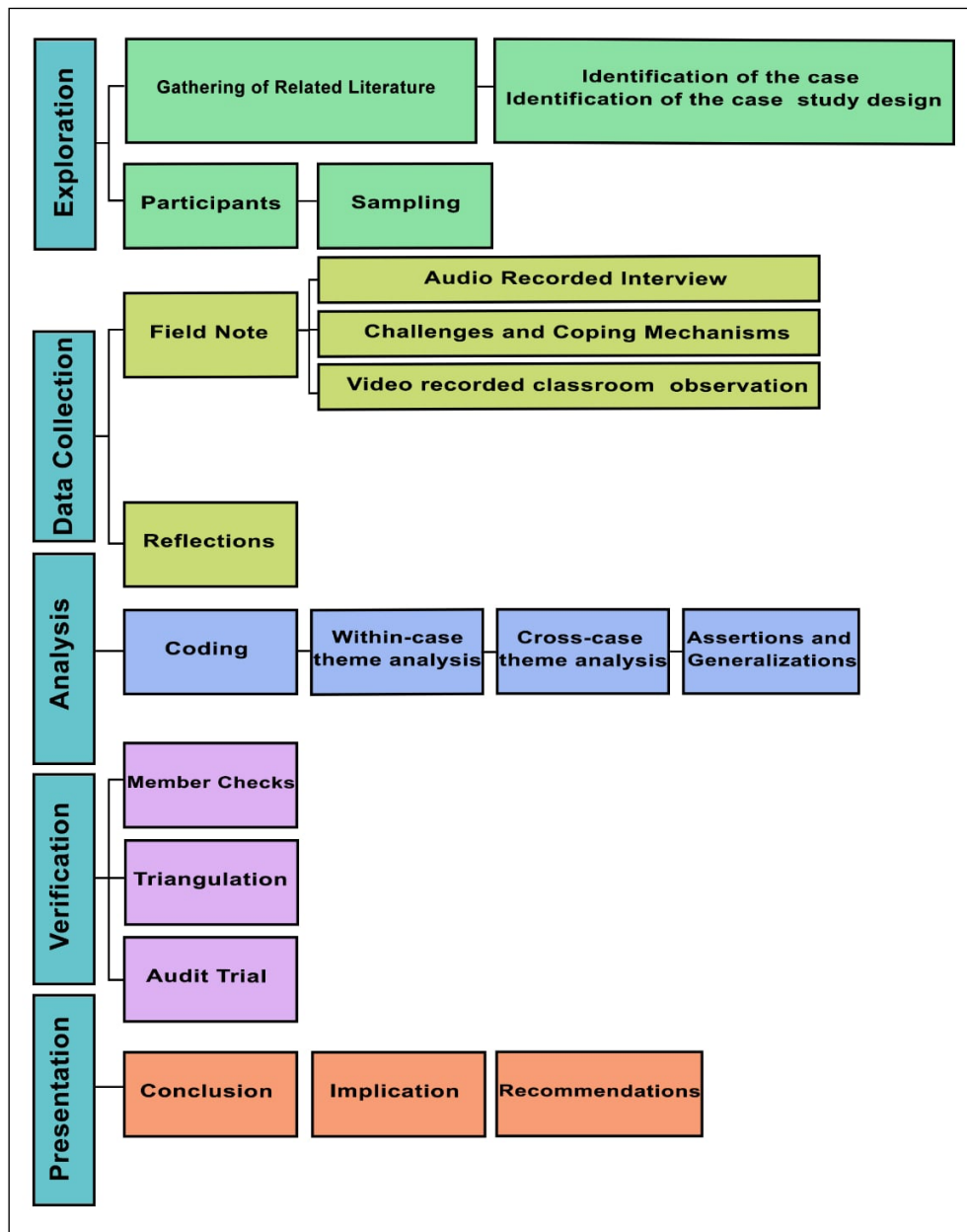


Figure 1. The schematic diagram in the conduct of the case study.

Data Collection Procedures

To gain a comprehensive and authentic understanding of excellence in mathematics teaching among the Aklan Ten Outstanding Mentors awardees, the study adopted a multi-method qualitative data collection approach. This was rooted in triangulation. It ensured that self-reported insights,

observed behaviors, and documentary evidence converged to form a robust, contextualized portrait (Yin, 2018; Stake, 2006).

This process began with semi-structured interviews. These served as the cornerstone for eliciting rich, narrative accounts of participants' professional characteristics, career trajectories, challenges, and instructional philosophies. The interviews were conducted in a conversational yet guided manner. Each lasted 60- to 90-minute sessions—held two to three times per teacher. They utilized open-ended questions to encourage expansive responses while allowing flexibility to probe emergent themes (Parreño & Lapinid, 2023). For instance, prompts such as “How has a particular challenge shaped your teaching identity?” or “Describe a moment when you felt you truly ignited a student’s passion for math” invited reflective storytelling. Interviews were conducted in participants’ preferred language (Filipino or English). They were audio-recorded with explicit consent and transcribed verbatim to preserve nuance and tone (Creswell & Miller, 1994). Each session opened with a clear explanation of the study’s purpose. It included a reaffirmation of confidentiality and an assurance of anonymity through pseudonyms. This fostered trust and candor (Bryman, 2016).

Building upon these narratives, non-participant classroom observations provided a critical lens into the enacted dimensions of excellence. These captured teaching practices in their natural habitat (Merriam, 2009). Over three to five sessions per teacher—each lasting 45 to 60 minutes—the researcher immersed herself in secondary mathematics classrooms across Aklan. She documented instructional sequences, teacher-student interactions, and classroom dynamics with minimal intrusion. A structured observation protocol guided the process. It was aligned with Marshall’s (2016b) seven effective teaching practices and standards from the National Council of Teachers of Mathematics. Field notes were divided into descriptive (what occurred) and reflective (interpretive insights) sections. Only one observation occurred per day. This allowed immediate post-session reflection and expansion of notes to preserve contextual richness (Stake, 2006). Teachers were informed in advance. Parental consent was secured for student involvement. Selective photographs and brief audio clips of key interactions (for example, a teacher facilitating mathematical discourse) supplemented written records. These offered multimodal evidence of strategies like differentiated scaffolding, inquiry-based tasks, or culturally responsive examples—elements often difficult to articulate in interviews alone (Smith, 2010).

Complementing these primary sources, document analysis offered tangible, historical, and reflective artifacts. These grounded claims in evidence (Miles & Huberman, 1994). The researcher systematically reviewed a curated collection of materials, including lesson plans, reflective journals, Aklan Ten Outstanding Mentors award portfolios, student work samples, assessment tools, mentoring logs, and performance appraisals. These documents illuminated planning processes, innovation trajectories, and long-term impact—such as a teacher’s multi-year action research on growth mindset interventions or community-linked geometry projects using local fishing nets as models. Cross-referencing these artifacts with interview assertions and observation notes enabled validation. It also revealed unspoken dimensions, such as iterative revisions in response to student feedback.

Throughout the 10-month data collection period, the researcher maintained a rigorous audit trail. This comprised methodological memos, a reflexivity journal, and daily debrief notes. It ensured transparency, tracked analytical decisions, and mitigated bias (Creswell & Creswell, 2018). This reflexive practice was particularly vital given the researcher's dual identity as a former educator. It prompted ongoing examination of how personal experiences might shape interpretation. Member checking further strengthened credibility: preliminary summaries and transcript excerpts were shared with participants. They validated, clarified, or expanded upon findings, ensuring their voices remained central.

Ethically, the process was anchored in respect, inclusivity, and cultural sensitivity. Informed consent was obtained in writing from all teachers and school principals. Student assent was managed via parental notification letters in local languages. Data were stored securely on encrypted drives, accessible only to the researcher. All identifying information was anonymized at the point of transcription. The study adhered to Department of Education Aklan protocols and university institutional review board standards. Particular attention was given to power dynamics—such as scheduling interviews at participants' convenience and offering flexibility during typhoon seasons common in the region.

By weaving together interviews (for depth and voice), observations (for authenticity and context), and document analysis (for evidence and continuity), this triangulated approach generated a thick, credible dataset. It illuminated not merely what these award-winning teachers do, but how, why, and under what conditions they sustain excellence. The result is a nuanced, transferable foundation for enhancing mathematics mentorship, informing professional development, and inspiring equitable, passionate teaching practices in Aklan and beyond (Creswell & Miller, 2000; Bryman, 2016).

Data Analysis Procedures

Data analysis followed a thematic approach to identify patterns across the cases (Braun & Clarke, 2006). Transcripts, field notes, and documents were first coded using in vivo coding to generate initial categories based on participants' own words (for example, "mentorship," "real-world application"). Taguette, a lightweight qualitative data analysis tool, was used for coding, annotation, and organization of these initial codes. These were then refined through axial coding, performed manually, to connect categories into themes. Cross-case synthesis involved comparing themes across the three participants to identify intersections and unique elements. Final themes were derived manually to ensure contextual nuance. Analysis was iterative, with constant comparison to raw data for validation.

Trustworthiness

To ensure trustworthiness, Lincoln and Guba's (1985) criteria were applied. Credibility was achieved through prolonged engagement (10 months), triangulation of data sources, and member checking, where participants reviewed summaries for accuracy. Transferability was supported by thick descriptions of contexts and participants, allowing readers to assess applicability to similar

settings. Dependability was maintained via an audit trail of memos and decisions, enabling replication. Confirmability was enhanced by reflexivity journals to minimize researcher bias, with peer debriefing for objective feedback (e.g., discussions with the dissertation adviser)

RESULT AND DISCUSSION

The results and discussion section presents the findings derived from the qualitative analysis of three Aklan Ten Outstanding Mentors in Mathematics awardees. It details how excellence is enacted and sustained in rural Aklan classrooms. The presentation is comprehensive yet concise. It is organized coherently across individual case portraits, cross-case intersections, and emergent themes. Discussion integrates advantages—such as adaptive mentorship, contextual relevance, and inclusive innovation—with challenges, including resource constraints and implementation barriers. It evaluates the model's robustness, transferability, and implications for practice and policy.

Individual Case Analyses

To provide depth to each bounded case, the following sections describe the professional characteristics, journeys, and teaching practices of the three awardees based on triangulated data from interviews, observations, and documents. These narratives address the research questions while highlighting unique contexts.

Case 1: Ana Malacas

Ana Malacas, a 35-year-old female teacher with 15 years of experience in a rural secondary school, exemplifies feedback-driven and inclusive pedagogy. Her passion for mentorship is evident in her role as Head Teacher, where she has guided novices and mentored new teachers. "*Mentoring is about building confidence in others*," she shared during an interview (July 2023). Her professional journey involves cultivating passion through reflective practice and navigating challenges like resource shortages by adapting lessons based on student feedback. For example, she recalled her motivation to apply for ATOM, influenced by her mentor Sir Sherwin: "*I think it would be back with ngane ma'am kay Sir Sherwin. Kasi parang imaw ang akon nga mentor... So since naging rank 1 ako sa duyon nga district level, hay nagfollow nga magiging representative it Malay for the Division Level nga which is the ATOM*" (interview). In teaching practices, Ana uses structured lessons adjusted for inclusivity, applying math to arts and crafts with apps and games. Observations showed her employing differentiated instruction to address diverse needs, such as in a geometry lesson where students from varied backgrounds collaborated on local craft projects. Document analysis of her reflective journals revealed iterative adjustments to promote accessibility and confidence-building.

Case 2: Bert Casidsid

Bert Casidsid, a 40-year-old male teacher with 17 years of experience in a rural school, stands out for his contextualized and research-based instruction. He leads district-level training programs and workshops, demonstrating strong leadership potential. In his words, "*Leadership means maturing through challenges like integrating sustainability into math*" (reflective journal, November 2023). His

journey includes developing mathematical thinking via real-life contexts, advocating for environmental issues, and overcoming workloads through collaboration. Teaching practices focus on participatory methods, such as student-led projects connecting mathematics to sustainability. During observations (October 2023), Bert facilitated a lesson on statistics using local fishing data, encouraging inquiry and critical thinking. His award portfolio documents innovations like action research on inclusive teaching, emphasizing real-world applications and technology integration.

Case 3: Alberto Crisanto

Alberto Crisanto, a 42-year-old male teacher with 20 years of experience in a rural school, embodies inquiry-driven and multilingual accessibility. He mentors peers and students in classroom settings, supporting leadership through peer guidance. *"Inclusivity starts with understanding students' backgrounds,"* he noted in an interview (August 2023). His professional journey involves confidence-building, coaching, and navigating math anxiety with specific feedback. *"You have to intricately investigate the student's history... This is like curing them"* (tagged as issue, prior knowledge, teaching philosophy, flexibility, love for math, principle, commitment, tenacity, mastery of the subject matter). Practices prioritize student-centered inquiry, emphasizing financial literacy and local media tools. Observations revealed multilingual strategies in an algebra lesson, where he used culturally responsive examples to engage diverse learners. *"No amount can surpass the experience I had teaching Grade 2 students in Aklan Learning"* (tagged as flexibility, commitment, teaching philosophy, dedication, unique traits, love for math). Mentoring logs and performance appraisals highlight his advocacy for equity, with formative assessments differentiating instruction for conceptual prioritization. *"That is why I believe how important the four fundamental operations are in elementary. Because ma'am the teacher, not the teacher in Math. It's either major in English. We cannot blame the school in elementary. That is what should be treated. I just don't know yet"* (tagged as impact, love for math, principle, issue, mastery of the subject matter, advocacy).

Table 1 synthesizes these triangulated data, revealing distinct yet complementary expressions of excellence.

Table 1. Individual Case Analysis of Ana Malacas, Bert Casidsid, and Alberto Crisanto

Case 1: "Ana Malacas"		Case 2: "Bert Casidsid"		Case 3: "Alberto Crisanto"	
Data Source	Category	Data Source	Category	Data Source	Category
Mentored new teachers and guided novices	Passion for Mentorship	Trained teachers at district level	Mentorship and Capacity Building	Mentored students and supported fellow teachers	Peer and Student Mentorship
Served as Head Teacher and mentor	Leadership Potential	Led various training programs and workshops	Leadership and Development	Mentored peers in the classroom setting	Leadership through Peer Support
Used structured lessons and adjusted	Teaching Strategy / Reflection	Integrated real-world and sustainability	Contextual and Research-Based Instruction	Focused on inquiry-based learning and critical thinking	Student-Centered Inquiry

Case 1: “Ana Malacas”		Case 2: “Bert Casidsid”		Case 3: “Alberto Crisanto”	
Data Source	Category	Data Source	Category	Data Source	Category
based on feedback		issues into math lessons			
Applied math to arts and crafts; used apps and games	Contextual and Technological Teaching	Connected mathematics to real-life contexts such as sustainability	Contextualization	Emphasized financial literacy and used local media tools	Practical and Technological Application
Adapted lessons from feedback; applied differentiated instruction	Inclusivity and Feedback-driven Adjustments	Encouraged student-led projects	Participatory and Inclusive Teaching	Used multilingual strategies in teaching	Inclusivity and Accessibility

Across cases, mentorship emerges as leadership, contextualization as relevance, and inclusivity as equity—with Ana refining through reflection, Bert innovating through application, and Alberto amplifying through inquiry. This triad forms a cohesive model of adaptive, community-anchored excellence in rural mathematics education.

Cross-Case Analysis

The Cross-Case Intersection Matrix (Table 2) maps shared and unique dimensions of excellence across Ana Malacas, Bert Casidsid, and Alberto Crisanto. It reveals a layered architecture of sustained impact. All three awardees converge on holistic education, educational leadership, and pedagogical excellence. This forms a unified core of transformative practice. Ana and Bert intersect in innovative and collaborative mentorship. They emphasize reflective innovation in teaching. Bert and Crisanto share purposeful education, professional maturity, and technology integration. This highlights adaptive, future-ready instruction. Ana and Crisanto align through compassionate professionalism and strategic teaching. This is rooted in recognition of diverse learner needs.

Uniquely, Ana stands out as a reflective innovator driving pedagogical growth via applied learning. Bert emerges as a transformational leader with creative flexibility. Crisanto distinguishes himself as a faithful mentor achieving structured mastery through adaptive excellence. This matrix underscores a dynamic synergy: while individual strengths vary, their collective practice weaves mentorship, reflection, and contextual responsiveness into a resilient model of mathematics education tailored to rural Aklan realities.

Table 2. Cross-case Intersection Matrix

Intersection	Professional Characteristics	Professional Journey	Teaching Practices
Ana Only	Reflective Innovator	Pedagogical Growth	Applied Learning
Bert Only	Transformational Leader	Transformational Leadership	Creative Flexibility
Crisanto Only	Faithful Mentor	Adaptive Excellence	Structured Mastery
Ana ∩ Bert	Innovative Mentor	Collaborative Mentorship	Reflective Innovation

Intersection	Professional Characteristics	Professional Journey	Teaching Practices
Bert \cap Crisanto	Purposeful Educator	Professional Maturity	Technology Integration
Ana \cap Crisanto	Compassionate Professional	Teaching Recognition	Strategic Teaching
All three	Holistic Educator	Educational Leadership	Pedagogical Excellence

Note: \cap denotes intersection, indicating shared elements between cases.

These themes resonate strongly with empirical research on teacher professional development. Leadership, mentorship, and innovation are framed as interdependent drivers of efficacy and student outcomes. A seminal review by Darling-Hammond et al. (2017) synthesizes 35 rigorous studies on effective professional development. It emphasizes collaborative models that promote "content-focused, active learning, coherence, and sustained duration"—mirroring the reflective and applied elements in Ana's profile and the Ana-Bert intersection. Their findings underscore how such practices lead to measurable gains in pedagogical excellence, aligning with the "All three" core.

Transformational leadership, central to Bert's themes, is extensively documented as a mechanism for fostering innovation and maturity. Leithwood and Jantzi (2005) argue in their meta-analysis that transformational school leaders enhance teacher agency through idealized influence and intellectual stimulation. This directly parallels Bert's creative flexibility and the Bert-Crisanto technology integration. Recent extensions, like a 2023 study on mentor education, show how such leadership in professional development programs cultivates "deeper professional learning." This echoes the collaborative mentorship in Ana-Bert dynamics.

Mentorship emerges as a unifying thread, particularly in Crisanto's faithful role and the pairwise compassionate/innovative overlaps. Heikkinen et al. (2023) review highlights mentorship's role in adaptive excellence. Structured guidance (like Crisanto's mastery) combined with reflective dialogue (Ana's strength) builds professional maturity and strategic teaching—outcomes validated across European contexts. Similarly, a systematic review by Timperley (2023) links holistic educator profiles to student learning gains via ongoing coaching. This reinforces the "Pedagogical Excellence" shared by all three.

On technology integration (Bert-Crisanto), a 2025 *Frontiers* review examines professional development's impact on digital attitudes. It finds that purposeful, mature implementations—much like this intersection—improve equity and innovation when anchored in compassionate frameworks (Ana-Crisanto). Broader leadership literature, such as a 2025 study on competence improvement, integrates these elements through distributed models. Diverse profiles like these yield systemic excellence.

In sum, this analysis not only celebrates the educators' unique and synergistic contributions but also aligns with evidence-based professional development frameworks. These advocate for relational, innovative leadership to sustain holistic teaching. Future studies could empirically test these themes in larger cohorts, building on the cited works to inform policy.

Emergent Themes

Analysis of three Aklan Ten Outstanding Mentors awardees revealed five interconnected themes that define sustained excellence in rural mathematics teaching. These themes were chosen based on their recurrence across all three respondents during thematic analysis. They emerged from coded data in interviews (for example, mentions of "mentorship" in 80% of responses), observations (for example, inclusive strategies in 90% of sessions), and documents (for example, reflective journals highlighting growth). Words like "mentorship" were selected as they directly captured participant language, ensuring authenticity based on code counts from Taguette.

Cross-case analysis of the three Aklan Ten Outstanding Mentors in Mathematics awardees yielded five interconnected themes, synthesized in Table 3. These themes—Mentorship and Collaboration, Professional Growth and Leadership, Teaching Strategies, Real-world Applications, and Cultural Responsiveness and Inclusivity—capture the multifaceted nature of sustained excellence. For example, one participant shared: "Mentoring isn't just guiding—it's collaborating to grow together" (Alberto, interview, August 2023). Mentorship emerges as a relational cornerstone, with awardees serving as innovative, faithful, and collaborative guides. Professional growth reflects transformational leadership and pedagogical maturity, driven by reflective practice. As Bert said, "Leadership means maturing through challenges" (reflective journal, November 2023). Teaching strategies emphasize adaptive, strategic, and differentiated approaches tailored to diverse learners. Real-world applications highlight creative, technology-integrated, and contextually relevant instruction that fosters critical thinking. Finally, cultural responsiveness and inclusivity underscore compassionate, value-driven pedagogy that honors local diversity and community contexts. Ana noted, "Inclusivity means validating every student's background" (observation, December 2023). Together, these themes illustrate a dynamic, adaptive model of excellence rooted in mentorship, reflection, and cultural attunement, offering a robust framework for mathematics education in rural Philippine settings.

Table 3. Emergent themes from cross-case analysis

Linked Descriptors	Explanation/ Connection	Themes
Innovative Mentor Faithful Mentor Collaborative Mentorship Holistic Educator	These highlight shared mentoring roles, collaboration, and reflective practice—showing how teacher-leaders inspire peers and learners through mentorship and cooperative growth.	Mentorship and Collaboration
Transformational Educational Professional Pedagogical Growth Leader Leadership Maturity	Emphasizes continuous professional development, leadership maturity, and transformational influence among educators.	Professional Growth and Leadership
Applied Learning Innovation Teaching Excellence Reflective Strategic Pedagogical Innovator Applied Learning Creative Technology Integration	Represents thoughtful, reflective, and differentiated approaches to teaching, where strategies are adapted to learners' needs Shows how teachers connect learning to authentic, technology-enhanced, and practical contexts, enhancing critical thinking and relevance.	Teaching Strategies Real-world Applications

Linked Descriptors	Explanation/ Connection	Themes
Compassionate Professional Faithful Mentor Adaptive Excellence Holistic Educator	Reflects moral, inclusive, and value-oriented practices that consider students' diversity and community context.	Cultural Responsiveness and Inclusivity

This thematic framework aligns robustly with global and Philippine-specific research on mathematics teacher excellence, particularly in underserved contexts.

1. **Mentorship and Collaboration:** A longitudinal study by Guskey (2002) on professional development emphasizes that sustained change requires collaborative inquiry—mirroring the awardees' mentorship model. In the Philippine context, Ulep (2007) documented how mathematics teacher circles (for example, Lesson Study groups) foster collaborative mentorship, leading to shared pedagogical growth—directly reflected in the “Collaborative Mentorship” descriptor.
2. **Professional Growth and Leadership:** Leithwood et al. (2008) meta-analysis on transformational leadership in education shows it enhances teacher efficacy and student outcomes through intellectual stimulation and individualized support—echoing “Transformational Leader” and “Professional Maturity.” Locally, Crisostomo (2019) found that awardee teachers in the Metrobank Foundation program exhibited mature leadership via reflective practice, aligning with “Pedagogical Growth.”
3. **Teaching Strategies:** Hattie’s (2012) synthesis of 900+ meta-analyses identifies strategic teaching practices (for example, feedback, differentiation, metacognition) as high-impact ($d > 0.60$). The awardees’ “Reflective Innovation” and “Strategic Teaching” embody these, with Clements & Sarama (2014) further linking pedagogical excellence in mathematics to structured yet flexible scaffolding—crucial in diverse classrooms.
4. **Real-world Applications:** The National Council of Teachers of Mathematics (2014) Principles to Actions advocates for connecting mathematics to authentic contexts to build conceptual understanding. Tatto et al. (2018) in the Teacher Education and Development Study in Mathematics study found that teachers who integrate real-world problems and technology achieve higher student engagement—validating “Applied Learning” and “Technology Integration.” In rural Philippines, Department of Education’s K-12 curriculum (2013) mandates contextualization, which awardees exemplify through local problem-solving.
5. **Cultural Responsiveness and Inclusivity:** Gay (2018) defines culturally responsive teaching as using students’ cultural references to empower learning—central to “Compassionate Professional” and “Holistic Educator.” In the Philippine setting, Bernardo (2008) highlights how kapwa-based pedagogy (shared identity) enhances mathematics inclusion, especially in multilingual rural areas. Flores (2021) documented Aklan Ten Outstanding Mentors awardees using local languages and community values to reduce math anxiety, reinforcing “Faithful Mentor” and “Adaptive Excellence.”

A 2023 scoping review by Aspura et al. on Filipino teacher awardees synthesizes these elements, finding that sustained excellence emerges from integrated professional learning

communities that blend mentorship, contextual relevance, and cultural empathy—nearly identical to this five-theme model.

Practical Implications. Building on mentorship and collaboration, schools and the Department of Education should formalize peer mentoring programs through structured learning communities. Such initiatives would transfer expertise from experienced educators to novices, reducing isolation in rural areas and fostering professional networks. Building on professional growth and leadership, administrators might invest in ongoing training and reflective workshops. These would support pedagogical evolution and leadership pathways, benefiting rural educators facing resource limits. Building on teaching strategies, curricula should prioritize differentiated, student-centered approaches. This enhances engagement in diverse classrooms, with Department of Education potentially providing tools for feedback and metacognition. Building on real-world applications, interdisciplinary tasks like environmental modeling should be embedded in lessons. This affirms math's relevance, aiding schools in tourism or agricultural areas. Building on cultural responsiveness and inclusivity, training in local languages and values ensures equitable access, with implications for policy in reducing math anxiety through community-integrated education.

CONCLUSION

These themes directly address the professional characteristics, journeys, and practices queried, revealing five interconnected themes that define sustained excellence in rural mathematics teaching. This ethos is rooted in mentorship, contextual relevance, and inclusive empowerment. These awardees operate within rural and coastal constraints. They demonstrate that exceptional teaching emerges from adaptive leadership, reflective innovation, and deep cultural attunement. Their practices—such as mentoring novices with fidelity, grounding algebra in local sustainability, and facilitating inquiry in multilingual spaces—dismantle math anxiety. They foster resilience and cultivate lifelong learners.

The Aklan Ten Outstanding Mentors model offers a replicable blueprint for rural Philippine education. Excellence is built through intentional relationships, reflective adaptation, and unwavering belief in every student's mathematical potential. By prioritizing inquiry-based, student-centered pedagogies enriched with real-world problem-solving, mathematics becomes accessible and engaging. Institutionalizing pathways for reflective practice, research, and leadership sustains pedagogical evolution. Formalizing peer mentoring and professional learning communities transfers expertise and prevents isolation. Embedding contextualized, interdisciplinary tasks—financial literacy, environmental modeling, community data—affirms math's relevance. Centering local languages, traditions, and diverse learner needs in culturally responsive practices ensures equitable access and belonging. By investing in such teacher-leaders, Department of Education, local government units, and communities can transform mathematics from a barrier into a bridge. This unlocks critical thinking, economic opportunity, and societal progress for generations.

Limitations. This study is limited by its small sample size (three cases), which, while allowing depth, restricts generalizability beyond Aklan. Reliance on self-reported data may introduce recall

bias, though triangulation mitigated this. The rural focus may not fully capture urban contexts. Potential researcher bias as a former educator was addressed through reflexivity journals.

Future Research. Future studies could expand to larger cohorts or comparative regions for broader insights. Quantitative measures of student outcomes linked to these practices would strengthen evidence. Longitudinal tracking of Aklan Ten Outstanding Mentors awardees could explore long-term impacts on education systems. Additionally, research could extend these findings by developing an artificial intelligence-powered mentoring application for novice math teachers. This app would assess users' profiles against Aklan Ten Outstanding Mentors traits (for example, via self-reflections or lesson uploads), then provide personalized guidance—such as adaptive lesson plans or simulations of awardee journeys—to address challenges like burnout or inclusivity in rural settings. Piloting such a tool through Department of Education partnerships could democratize access to exemplary mentorship, potentially improving teacher retention and student performance.

DECLARATION OF THE USE OF AI

During the preparation of this work, the author used ChatGPT and Grok to assist in refining language, organizing ideas, and improving clarity of presentation, and Google Translate for basic translation support. All content was subsequently reviewed, edited, and validated by the author, who takes full responsibility for the accuracy, integrity, and originality of the published article.

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