

Motivations, Challenges, Coping Mechanism, Benefits, and Insights of Research Engagement of Mathematics Educators

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ABSTRACT

This qualitative study employed Interpretative Phenomenological Analysis (IPA) as its research design and centered on eight mathematics educators from the Negros Island Region in the Philippines. These educators were officially enrolled in master's or doctoral programs at Higher Education Institutions (HEIs) during the academic year 2024-2025. The researcher employed purposive-convenience sampling, selecting readily accessible mathematics educators who also met specific criteria: they had conducted at least one research study, had presented a study, and had taught in a public high school for at least two years. The study sought to understand their lived experiences related to research engagement, using in-depth interviews to capture their motivations, challenges, coping mechanisms, perceived benefits, and insights. The mathematics educators'

primary motivator stemmed from a genuine desire to improve their learners' lives, focusing on strategies to enhance comprehension, reduce anxiety, and promote equity. However, these educators faced considerable challenges, including time constraints due to heavy workloads and limited resources, particularly in public schools and part-time positions. To overcome these obstacles, they demonstrated resourcefulness and relied on collaboration, sharing ideas and leveraging networks for support. Despite the hardships, research engagement brought significant rewards, most notably witnessing learners' "lightbulb moments" and experiencing professional growth. Ultimately, the study highlighted the dedication and resilience of these educators, emphasizing the urgent need for institutional support to foster a research culture that empowers them to advance mathematics education in the Philippines.

Keywords: *Interpretative Phenomenological Analysis (IPA), Research Engagement, Motivations, Challenges, Coping Mechanisms, Benefits, Insights, Mathematics Educators,*

INTRODUCTION

By research engagement, educators can rediscover their passion and refine their teaching methods through reflection and experimentation. Exposure to new research findings allows for innovative techniques in the classroom, leading to fresh insights into teaching and learning (Nelson et al., 2017). As Brown and Zhang (2016) points out, research brings fresh material into the classroom. When teaching is informed by credible research, educators can make better decisions, contribute to curriculum development, and improve the school as a whole (Brown and Zhang, 2016). Studies highlight that educator research is an important way to explore the complexities of classroom teaching, benefiting school policies and educational discussions in general (Brennan et al., 2019; Li et al., 2020). The research is crucial for academic institutions, fostering knowledge transfer, innovation, and

solutions to socio-economic challenges, with academic institutions playing a key role in achieving national development goals (Brown et al., 2016; Western Sydney University, 2021).

In the Philippines, institutions were encouraged to prioritize research to boost knowledge and innovation (Wa-Mbaleka, 2015). Policies, like DepEd's research agenda (DepEd, 2016), aimed to promote quality education through research, while CHED expected universities to produce high-quality research that advanced learning and national development. Rewards and incentives were offered to teachers to motivate research, and dissemination efforts were part of faculty evaluations. Teachers often handled research-related subjects and supervised learner research. However, despite these efforts, only a few teachers, especially in public schools, actively engaged in research (Ulla et al., 2017), often due to demanding schedules (Ulla, 2017). CHED and DepEd actively promoted research as a key part of teacher development, recognizing their unique position to address teaching and learning issues, and it was even integrated into performance evaluations. The Basic Education Research Agenda encouraged classroom-based research to solve problems and improve teaching, yet many teachers struggled to find the time for research.

Even though the Commission on Higher Education (CHED) in the Philippines was encouraging research among educators in Higher Education Institutions (HEIs), it seemed like things weren't really taking off, and lots of educators were mainly focused on teaching. A significant number of HEI faculty members hold only bachelor's or master's degrees, with a smaller proportion holding doctorate degrees (CHED, 2019). This suggests a potential gap in research engagement, as the focus may be more on teaching than on knowledge generation through research. Although educators with bachelor's and master's degrees are encouraged to research, the relatively small number of doctorate holders, who possess advanced research skills, may contribute to a lack of a strong research climate in Philippine higher education. This study addressed this gap by exploring the motivations, challenges, coping mechanisms, perceived benefits and insights of research engagement among mathematics educators, aiming to understand their experiences and develop an enhancement plan to support their research endeavors.

Statement of the Problem

This study sought to deeply understand the lived experiences of mathematics educators as they engaged in research. Specifically, this study sought to answer the following questions:

1. What are the motivations of mathematics educators engaged in research?
2. What are the challenges faced by mathematics educators engaged in research?
3. What are the coping mechanisms to address the challenges faced by mathematics educators engaged in research?
4. What are the mathematics educators perceived benefits from engaging in research?
5. What insights can be identified in order to help mathematics educators in coping with challenges and to avail of the benefits of engaging in research?
6. What suggestions can be made to enhance the strategic plan for research engagement?

Theoretical/Conceptual Framework

The exploration of lived experiences among mathematics educators engaged in research necessitated a robust and multifaceted theoretical framework. This framework was primarily guided by Interpretative Phenomenological Analysis (IPA), a qualitative approach designed to understand how individuals make sense of their lived experiences (Smith & Osborn, 2008). Acknowledging the active role of individuals in interpreting their world, IPA was further complemented by constructivism, which suggests that knowledge is actively constructed through experience and reflection (Schwandt, 1994). Bandura's (1977) self-efficacy theory was also integrated to examine the influence of educators' beliefs in their research capabilities on their motivation, coping strategies, and perceived benefits. Interpretative Phenomenological Analysis (IPA): Interpretative Phenomenological Analysis (IPA) served as the overarching methodological framework, guiding the exploration of mathematics educators lived experiences in research. IPA was particularly well-suited for this purpose, as it is fundamentally concerned

with understanding, in rich detail, how individuals interpreted and made sense of their personal experiences (Smith & Osborn, 2008).

This approach acknowledged that participants were not simply passive recipients of events, but active agents who strived to understand and give meaning to their world. The key principles of IPA, including its idiographic focus, which emphasized the detailed examination of individual experiences; its double hermeneutic, recognizing that the researcher was interpreting the participant's interpretation; its contextual sensitivity, demanding an understanding of experiences within their specific social, cultural, and personal contexts; and its emphasis on meaning-making, exploring how individuals ascribed meaning to their experiences, provided a rigorous and systematic approach to uncovering the essence of being a mathematics educator-researcher.

Constructivism: As a complement to IPA, constructivism offered a valuable theoretical perspective by recognizing that individuals actively constructed their own understanding and knowledge of the world through experiencing things and reflecting on those experiences (Schwandt, 1994). This framework was particularly relevant to understanding mathematics educators' research engagement, as they actively constructed their understanding of research through their direct involvement in the process. Their motivations, challenges, coping mechanisms, perceived benefits, and insights were not simply pre-existing factors, but were actively shaped and reshaped through their ongoing experiences with research. This aligned with the constructivist notion that learning is an active, rather than passive, process, and that individuals build upon their prior knowledge and experiences to create new understandings (Ernest, 1991).

Self-Efficacy Theory (Bandura): To further enrich the analysis, this study drew upon Bandura's (1977) self-efficacy theory, which posited that an individual's belief in their ability to succeed in specific situations or accomplish a task played a critical role in shaping their behavior and outcomes. In the context of mathematics educators and research, self-efficacy referred to their beliefs in their ability to successfully conduct research, from formulating research questions to analyzing data and disseminating findings. Educators with high self-efficacy were more likely to be motivated to engage in research, persist through challenges, utilize effective coping mechanisms, perceive greater benefits, and insights from their research endeavors (Bandura, 1994). Conversely, those with low self-efficacy may have been more likely to avoid research, give up easily when faced with obstacles, and perceive research as a burden rather than an opportunity.

Through the integration of IPA, constructivism, and self-efficacy theory, this study provided a robust and nuanced framework for understanding the lived experiences of mathematics educators as researchers. IPA furnished the methodological rigor for exploring their individual perspectives and meaning-making processes, while constructivism highlighted the active role of educators in shaping their understanding of research. Self-efficacy theory further illuminated the influence of their beliefs in their research capabilities on their engagement and outcomes. This integrated framework allowed for a holistic and in-depth exploration of the factors that enabled or hindered research engagement among mathematics educators, ultimately informing the development of targeted interventions and support systems to empower them as effective researchers and enhance their professional growth.

METHODS

This study explored the lived experiences of mathematics educators in the Negros Island Region, Philippines, concerning their research engagement during the 2024-2025 school year. A qualitative approach, utilizing Interpretative Phenomenological Analysis (IPA) (Smith and Nizza, 2022), was adopted to understand the educators' subjective perspectives on their motivations, challenges, coping mechanisms, perceived benefits, and insights related to research. Eight mathematics educators enrolled in masteral or doctoral programs were selected using purposive- convenience sampling, ensuring participants possessed firsthand research experience. Data collection involved in-depth, semi-structured interviews, inspired by Tarrayo et al. (2021), encouraging detailed accounts of experiences. A researcher-developed interview guide with open-ended questions explored key areas

of research engagement. All interviews were audio/video-recorded with informed consent and transcribed verbatim for analysis.

The data was analyzed using IPA procedures, as outlined by Smith and Nizza (2022), involving immersion in transcripts, identification of themes, exploration of connections, and a search for patterns across accounts. A narrative account was then produced, highlighting shared and unique experiences. Trustworthiness was enhanced through member checking, peer debriefing, and a detailed audit trail. Throughout the study, ethical considerations were prioritized. Informed consent was obtained, participants were informed of their right to withdraw, and anonymity was maintained through pseudonyms and secure data storage. In accordance with ethical guidelines, the data was preserved for a limited time and then permanently destroyed. The study aimed to provide valuable insights into the research experiences of mathematics educators, contributing to the understanding of factors influencing their engagement and informing future support systems.

RESULTS AND DISCUSSION

This section presents and discusses the key findings from in-depth interviews with mathematics educators in the Negros Island Region, Philippines, exploring their experiences with research engagement. The study found a clear interplay between the mathematics educators' motivations, the challenges they faced, the coping mechanisms they employed, the benefits they perceived and insights from research engagements. The challenges often threatened their motivations, but their coping mechanisms, particularly collaboration and efficient time management, enabled them to experience benefits that, in turn, reinforced their commitment to research. The recurring call for greater institutional support underscored the need for systemic changes to address the challenges and empower mathematics educators to engage in meaningful research.

Motivations: A Learner-Centered Ethos Driving Research Engagement

The interviews revealed a consistent and compelling theme: a deep commitment to learner success as the primary driver for research engagement among mathematics educators. The study identified several key themes related to their motivations for engaging in research:

Theme 1: A Deep Commitment to Learner Success: The primary motivation stemmed

from a genuine desire to improve their learners' learning and well-being. They sought effective strategies to address learner struggles, make math more accessible, and foster equitable learning environments. This intrinsic motivation aligned with findings from the Education Endowment Foundation (EEF) in England, which emphasized the importance of teachers' beliefs and values in driving their engagement with evidence-informed practices (Nelson et al., 2017). This suggested that professional development and support systems should highlight how research can directly impact learner learning and well-being to resonate with educators' core values.

Theme 2: Addressing Gaps in Knowledge and Practice: Research served as a means to

bridge the gap between existing knowledge and the specific needs of their learners and classrooms. They aimed to identify and implement evidence-based practices to enhance teaching and learning. The desire to bridge the gap between research and practice reflects a need for effective knowledge mobilization strategies. Torres and Steponavičius (2022) highlighted the role of intermediaries in connecting researchers and practitioners, suggesting that schools and districts should invest in creating such roles to facilitate the translation of research into actionable classroom strategies.

Theme 3: Professional Growth and Development: Engaging in research provided

opportunities for professional growth, allowing them to stay current with the latest developments in mathematics education, refine their teaching skills, and contribute to the knowledge base. The drive for professional growth underscored the importance of providing opportunities for teachers to develop their research

skills and stay current with the latest developments in mathematics education. The OECD (2023) emphasized the need for accessible learning opportunities and the integration of research engagement into teacher training and professional development programs.

Theme 4: A Sense of Agency and Empowerment: Research empowered them to take

ownership of their practice, make informed decisions, and advocate for changes that would benefit their learners and schools. A sense of agency and empowerment can be linked to the concept of "networked leadership" (OECD, 2023), where educators were encouraged and supported to take ownership of their practice and advocate for evidence-based changes. This suggested that schools should foster a collaborative environment where teachers feel empowered to contribute to decision-making and shape school policies (Dikilitaş & Comoglu, 2020). The educators consistently expressed a strong desire to improve their learners' learning and well-being. Their motivation stemmed from a genuine concern for learner struggles, a desire to make mathematics more accessible, and a commitment to fostering equitable learning environments. As Educator A articulated, "I can't just sit back and watch them struggle." This intrinsic motivation, rooted in a desire to make a tangible difference in their learners' lives, often outweighed extrinsic factors such as job requirements or institutional pressures.

This finding aligns with existing literature on teacher motivation, which emphasizes the importance of intrinsic factors such as a desire to help learners and make a difference in their lives. The learner-centered ethos observed in this study suggests that interventions aimed at supporting research engagement should tap into this intrinsic motivation by highlighting the potential for research to directly improve learner outcomes (Li et al., 2020; Rothinam et al., 2024). While the educators' commitment to learner success served as a powerful catalyst for research engagement, they also faced significant challenges that often hindered their efforts.

Challenges: Navigating Time Scarcity, Limited Resources, and Skill Deficits

Despite their strong motivations, mathematics educators in the Negros Island Region encountered numerous challenges that impeded their ability to fully engage in research. This section delves into these obstacles, highlighting their impact on research engagement. Based on the educators' accounts, the key challenges they faced in engaging with research can be summarized by the following themes:

Theme 1: Time Scarcity: The overwhelming demands of teaching, administrative tasks,

and graduate studies left them with insufficient time to dedicate to research. This was a pervasive issue, regardless of their school type or position. The pervasive lack of time aligns with the OECD's (2023) finding that 73% of education systems report a lack of time as a barrier to research engagement. This suggested that schools and districts should explore strategies for explicitly allocating time for research, such as reducing teaching loads or providing dedicated research days (Mitton-Kükner, 2015).

Theme 2: Limited Access to Resources: A lack of funding, research materials, statistical

software, and databases hindered their ability to conduct rigorous and meaningful research. This was particularly acute for educators in public schools and part-time positions. The scarcity of resources, particularly for educators in public schools and part-time positions, echoes the OECD's (2023) finding that insufficient financial resources were a significant barrier to research use, especially for practitioners. This underscored the need for increased funding opportunities and access to research materials, statistical software, and databases (Buffington & Sutters, 2017).

Theme 3: Lack of Research Skills and Expertise: Many felt inadequately prepared for

the complexities of research, lacking training in research methodologies, data analysis, and scholarly writing. This created a sense of overwhelm and uncertainty. The educators' expressed need for improved research skills aligns with the Education Endowment Foundation's (EEF) finding that practitioners need enhancement of research literacy skills (Nelson et al., 2017). This suggested that accessible and practical research training and mentorship programs are crucial for building their capacity to engage in meaningful research (Xu, 2024c).

Theme 4: Ethical Considerations and Complex Approval Processes: Navigating

ethical considerations and obtaining research approvals proved challenging, particularly when dealing with vulnerable learner populations. Lengthy and complex approval processes further discouraged research engagement. While the provided documents do not directly address ethical considerations, the need for streamlined and efficient ethical review processes was implied by the call for simplified processes and reduced administrative burdens (Baker et al., 2024).

Theme 5: Balancing Rigor, Innovation, and Impact: Some educators, particularly those

in private institutions, felt pressured to produce groundbreaking research that would be published in top-tier journals. This created a tension between conducting rigorous research, fostering innovation, and making a meaningful effect on their learners and the field. The pressure to produce groundbreaking research, particularly in private institutions, highlighted the need for a nuanced understanding of research quality and impact. The focus should be on supporting research that is both rigorous and relevant to the needs of learners and the field (Finch et al., 2018).

Theme 6: Lack of Support for Part-Time Faculty: Part-time faculty faced unique

challenges, including limited access to resources, mentorship, and collaboration opportunities. This created a sense of isolation and made it difficult for them to compete with their full-time colleagues. The unique challenges faced by part-time faculty, including limited access to resources and mentorship, underscored the need for equitable support structures. Institutions should consider providing targeted resources and opportunities to level the playing field for part-time faculty (Buch et al., 2017).

Theme 7: Securing Research Funding: Securing funding for research projects was a

competitive and time-consuming process, requiring significant effort and expertise. The difficulty in securing research funding highlighted the need for universities to invest more in research infrastructure and support faculty in securing external funding, according to OECD (2023).

Theme 8: Balancing Teaching, Research, and Administrative Duties: Juggling the

demands of teaching, research, and administrative duties created a constant balancing act, leading to stress and burnout. The constant balancing act between teaching, research, and administrative duties leading to stress and burnout, highlighted the need for systemic support and a healthy balance between teaching and research responsibilities (OECD, 2023). These challenges, often interconnected and mutually reinforcing, highlight the systemic barriers that hinder mathematics educators' ability to engage in research. The educators consistently reported facing significant challenges related to time scarcity, limited access to resources, and a lack of research skills and expertise. The overwhelming demands of teaching, administrative tasks, and graduate studies left them with insufficient time to dedicate to research. As Educator B noted, "It's like trying to bake a cake without all the ingredients." This lack of resources made it difficult to conduct rigorous and meaningful research. Furthermore, many educators felt inadequately prepared for the complexities of research, lacking training in research methodologies, data analysis, and scholarly writing.

These findings align with previous research highlighting the challenges faced by teachers in engaging with research, including time constraints, lack of funding, and insufficient research skills (Ulla, 2018; Tarrayo, Hernandez, & Claustro, 2021). These systemic barriers underscore the need for targeted interventions to address these challenges and create a more supportive research environment. Despite these formidable challenges, the mathematics educators in this study demonstrated remarkable resilience, developing a range of coping mechanisms to sustain their research efforts. Coping Mechanisms: Collaboration, Resourcefulness, and Strategic Time Management Faced with numerous obstacles, the mathematics educators in this study developed a range of coping mechanisms to navigate the challenges of research engagement. This section examines these strategies, highlighting their importance in sustaining research efforts.

The study revealed a range of coping mechanisms employed by mathematics educators to navigate the challenges of research engagement:

Theme 1: Strategic Time Management: Educators adopted various time management

strategies, such as creating detailed schedules, allocating specific time blocks for research, and utilizing small pockets of time during lunch breaks or after school. The educators' emphasized on time management aligned with the OECD's (2023) recognition of time as a critical resource for research engagement. This suggested that interventions aimed at supporting research should provide practical strategies for time management and workload reduction (Buch et al., 2017).

Theme 2: Resourcefulness in Finding Free Resources: They became adept at identifying

and utilizing free online resources, open-access journals, and publicly available datasets to overcome limitations in funding and access to research materials. Their ability to identify and utilize free online resources reflected a proactive approach to overcoming resource limitations. This highlighted the importance of promoting awareness of and access to such resources, as well as providing training on how to critically evaluate their quality (Fisher, 2023).

Theme 3: Building and Leveraging Professional Networks: Collaboration with

colleagues, mentors, and other professionals proved crucial. They shared ideas, resources, and provided emotional support to one another, creating a sense of community and shared purpose. The crucial role of collaboration and networking aligned with the Education Endowment Foundation's (EEF) emphasized on positive school cultures that encouraged collaboration and knowledge sharing (Nelson, 2017). This suggested that schools and districts should foster professional learning communities and provide opportunities for teachers to connect with colleagues and experts.

Theme 4: Seeking Mentorship and Guidance: They actively sought mentorship from

experienced researchers and experts in their field to gain guidance on research methodologies, data analysis, and scholarly writing. The active pursuit of mentorship reflected a need for structured support systems to guide educators through the research process. The OECD (2023) highlighted the importance of human resources and capacity development for research use, suggesting that mentorship programs can play a key role in building research skills and confidence.

Theme 5: Focusing on Small, Manageable Projects: To avoid feeling overwhelmed,

they often focused on smaller, more manageable research projects that could be integrated into their teaching practice. The strategy of focusing on smaller projects suggested a need for research methodologies and frameworks that were accessible and relevant to classroom practice (Glenn et al., 2023).

Theme 6: Maintaining a Strong Sense of Purpose: Their commitment to improving

learner learning and making a positive impact on their schools and communities served as a powerful source of motivation, helping them to persevere despite the challenges. Their commitment to improving learner learning aligned with findings from Hasan et al. (2025) which emphasized a desire to improve their learners' learning and well-being, seeking effective strategies to address learner struggles, make mathematics more accessible, and foster equitable learning environments.

Theme 7: Prioritizing Organization and Planning: They emphasized the importance of

staying organized, creating detailed plans, and breaking down complex tasks into smaller, more manageable steps. While the provided documents do not directly address organization and planning, these skills were implicitly important for effective time management and research engagement (Akhmarov et al., 2023).

Theme 8: Reliance on Research Assistants: Some educators, particularly those with

access to resources, relied on research assistants to help with data collection, analysis, and other research tasks. The reliance on research assistants by some educators underscored the importance of providing access to support staff and resources, particularly for those with limited time and expertise (Vecaldo, et al., 2019). These coping mechanisms, often employed in combination, demonstrate the educators' resilience and resourcefulness in navigating the challenges of research engagement. The educators demonstrated remarkable resourcefulness and creativity in overcoming the challenges they faced. They adopted various time management strategies, such as creating detailed schedules and utilizing small pockets of time for research. They also became adept at identifying and utilizing free online resources, open-access journals, and publicly available datasets. Perhaps most importantly, they emphasized the importance of collaboration, building and leveraging professional networks to share ideas, resources, and provide emotional support.

These findings align with existing literature highlighting the importance of social support and professional learning communities in promoting teacher development and research engagement (Brennan et al., 2019; Johannesson, 2020). The coping mechanisms employed by these educators underscore the importance of fostering collaboration and providing access to resources to support their research efforts (Bergmark, 2020). Despite the challenges and the need for creative coping mechanisms, the mathematics educators in this study reported experiencing significant benefits from their engagement in research.

Perceived Benefits: Enhanced Practice, Professional Growth, and Learner Success

Despite the numerous challenges, the mathematics educators identified several significant benefits stemming from their engagement in research. This section explores these rewards, highlighting their impact on their professional lives and their learners' learning. Despite the numerous challenges, the mathematics educators identified several significant benefits stemming from their engagement in research:

Theme 1: Enhanced Teaching Skills and Knowledge: Research provided them with new

insights into effective teaching strategies, curriculum development, and assessment methods, leading to improved classroom practice. The connection between research and improved teaching practice aligns with the Education Endowment Foundation's (EEF) emphasis on evidence-informed teaching (Coldwell et al., 2017). This suggests that professional development initiatives should focus on helping teachers translate research findings into practical classroom strategies.

Theme 2: Increased Learner Understanding and Achievement: They witnessed

firsthand how research-informed interventions and strategies could positively impact learner learning and achievement, leading to a greater sense of fulfillment and purpose. The educators' observation that research-informed interventions positively impact learner outcomes reinforces the importance of promoting research use in schools. Brown et al. (2022) highlight the need for effective strategies to help teachers use evidence in the classroom to improve learner learning.

Theme 3: A Sense of Accomplishment and Contribution: Publishing their research and

sharing their findings with the wider community provided a sense of accomplishment and contribution to the field of mathematics education. The sense of accomplishment derived from publishing and sharing research suggests that institutions should provide opportunities for educators to disseminate their work and contribute to the wider field of mathematics education (Scheiner et al., 2024).

Theme 4: Professional Recognition and Credibility: Engaging in research enhanced

their professional standing, increased their credibility with colleagues and administrators, and opened doors to new opportunities for collaboration and leadership. The link between research engagement and professional recognition underscores the importance of incentivizing research participation. The OECD (2023) emphasizes the need for system-level incentives to support researchers' attitudes and engagement.

Theme 5: Personal Growth and Development: The research process fostered personal

growth, enhancing their critical thinking skills, problem-solving abilities, and confidence. The educators' reports of personal growth and enhanced critical thinking skills highlight the value of research as a professional development tool (Eunice et al., 2024).

Theme 6: Staying Current with the Latest Developments: Research allowed them to

stay abreast of the latest trends, theories, and best practices in mathematics education, ensuring that their teaching remained relevant and effective. The ability to stay abreast of current trends and best practices through research aligns with the OECD's (2023) emphasis on the need for adequate human resources and capacity development for research use.

Theme 7: Mentoring Opportunities: Research provided opportunities to mentor graduate

learners and contribute to the development of future generations of mathematics educators. The mentoring opportunities that come with research engagement highlight the importance of fostering a culture of collaboration and support within schools and districts (Hodge et al., 2019; Giles, 2021).

Theme 8: A More Reflective and Evidence-Based Practice: Research encouraged them

to become more reflective practitioners, constantly evaluating their teaching methods and seeking evidence to support their decisions. The development of a more reflective and evidence-based practice aligns with the broader goals of promoting research engagement as a means of improving the quality of education (Crawford, 2022). The educators reported that research provided them with new insights into effective teaching strategies, curriculum development, and assessment methods, leading to improved classroom practice. They also witnessed firsthand how research-informed interventions and strategies could positively impact learner learning and achievement. Furthermore, engaging in research enhanced their professional standing, increased their credibility with colleagues and administrators, and opened doors to new opportunities for collaboration and leadership. These findings align with previous researches highlighting the benefits of teacher research, including enhanced teaching skills, improved learner outcomes, and increased professional recognition. The benefits identified by these educators underscore the importance of supporting research engagement as a means of promoting teacher development and improving learner learning (Chow et al., 2015; Anwaruddin, 2019; Dikilitaş, 2019, Li et al., 2020).

The experiences and insights of these mathematics educators provide valuable guidance for developing an effective enhancement plan to support their research engagement.

Insights: A Multi-Faceted Approach to Systemic Support

Based on the educators' experiences and expressed needs, the following themes emerged as crucial components of an effective enhancement plan to support their research engagement. This section outlines these key elements, drawing on both the educators' insights and relevant literature. Based on the educators' experiences and expressed needs, the following themes emerged as crucial components of an effective enhancement plan to support their research engagement:

Theme 1: Dedicated Research Time: Allocating protected time within the school day or

week specifically for research activities was deemed essential. This would alleviate the pressure of balancing teaching and research responsibilities and provide them with the space and time needed to conduct meaningful inquiry. The emphasis on protected research time aligned with the OECD's (2023) finding that a lack of time was a major barrier to research engagement. Allocating dedicated time acknowledged the demanding workloads of educators and provided the necessary space for meaningful inquiry.

Theme 2: Accessible Research Training and Mentorship: Providing practical, hands-

on training in research methodologies, data analysis, and scholarly writing was seen as critical for building their skills and confidence. Mentorship programs, pairing experienced researchers with novice educators, would provide ongoing support and guidance. The need for practical research training and mentorship was supported by the Education Endowment Foundation (EEF) research, which indicated that practitioners needed enhancement of research literacy skills (Nelson et al., 2017). Mentorship programs provided guidance and support, building educators' confidence and expertise.

Theme 3: Increased Funding Opportunities: Establishing grant programs specifically

for teacher-led action research projects would provide them with the financial resources needed to purchase materials, access databases, and attend conferences. Establishing grant programs directly addressed the resource scarcity reported by many educators. The OECD (2023) emphasized the need for stable funding to produce relevant research and syntheses.

Theme 4: Simplified Ethical Review Processes: Streamlining the ethical review process

and providing clear guidelines would reduce the burden of paperwork and ensure that research projects could be implemented in a timely and ethical manner. While not explicitly mentioned in the provided files, the need for streamlined ethical review processes was implied by the overall goal of reducing administrative burdens and facilitating research (Herbert et al., 2015).

Theme 5: Supportive Research Communities: Creating supportive research

communities within schools and districts would foster collaboration, provide opportunities for sharing ideas and resources, and create a sense of belonging. Creating supportive research communities aligned with the EEF findings on the importance of positive school cultures. Brown, Daly, and Liou (2016) found that positive cultures were correlated with high levels of research engagement.

Theme 6: Access to Resources and Infrastructure: Ensuring easy access to research

journals, statistical software, online databases, and other essential resources would remove barriers and facilitate research engagement. Ensuring access to resources and infrastructure directly addressed the systemic factors that the OECD (2023) identified as crucial for research engagement. This included both "hard" infrastructure (facilities, governance) and "soft" infrastructure (networks, databases).

Theme 7: Recognition and Rewards for Research: Acknowledging and celebrating

educators' research accomplishments through awards, stipends, and opportunities to present their findings would provide motivation and reinforce their commitment to research. Acknowledging and celebrating research accomplishments provided incentives for educators to engage in research, aligning with the OECD's (2023) emphasis on the importance of incentives.

Theme 8: Equitable Support for Part-Time Faculty: Addressing the unique needs of

part-time faculty by providing them with equitable access to resources, mentorship, and collaboration opportunities would help level the playing field and empower them to engage in research. Addressing the unique needs of part-time faculty promoted equity and inclusion in research engagement (Buch et al., 2017b). These themes underscore the need for a multi-faceted approach to supporting mathematics educators' research engagement, addressing both individual skill development and systemic barriers. The educators emphasized the need for dedicated research time, accessible research training and mentorship, increased funding opportunities, simplified ethical review processes, supportive research communities, access to resources and infrastructure, recognition and rewards for research, and equitable support for part-time faculty. These recommendations reflect a desire for systemic changes that would address the challenges they face and empower them to engage in meaningful research.

These recommendations align with the OECD's framework for systemic enablers of research engagement, which emphasizes the importance of resources, structures and processes, incentives, and leadership (Anwaruddin, 2019; OECD, 2023). Implementing these recommendations would require a multi-faceted approach involving policymakers, administrators, and researchers working together to create a more supportive and enabling research environment.

CONCLUSION

Exploration into the research lives of mathematics educators in the Negros Island Region revealed a compelling narrative, best understood through distinct yet interconnected themes. **Motivations: A Heart for Learners.** The motivations of the mathematics educators were deeply rooted in a desire to improve their learners' lives. The study revealed that their research endeavors were not driven by personal career advancement or a mere fulfillment of institutional requirements. Instead, the educators were primarily focused on finding effective strategies to help their learners grasp mathematical concepts, alleviate their anxieties towards the subject, and foster a more equitable learning environment in their classrooms. They expressed a strong yearning to see their learners succeed, viewing research as a valuable tool to achieve this goal. **Challenges: Battling Time and Scarcity.** Despite their strong commitment, the mathematics educators faced significant challenges that hindered their research engagement. The most prominent challenge was the relentless pressure of time, stemming from heavy teaching loads, administrative responsibilities, and the demands of their own graduate studies. This time scarcity was further compounded by a lack of resources, particularly for educators working in public schools and those in part-time positions. Access to adequate funding, essential research materials, and even basic software proved to be a constant struggle.

Coping Mechanisms: Strength in Numbers and Ingenuity. To navigate these obstacles, the mathematics educators demonstrated remarkable resourcefulness and a strong reliance on collaborative networks. Collaboration served as a lifeline, enabling them to share ideas, exchange resources, and offer emotional support to one another. They also proved adept at finding creative solutions to resource limitations, effectively utilizing free online resources and leveraging their professional connections to access information and expertise. **Benefits: The Rewards of Transformation.** Engaging in research, despite its hardships, yielded meaningful benefits for the mathematics educators. While external recognition and accolades were appreciated, the most profound reward was witnessing their learners' "lightbulb moments," those instances of sudden understanding that validated their efforts and ignited their passion for teaching. Furthermore, the research process itself fostered professional growth, enhancing their teaching skills, expanding their knowledge base, and boosting their confidence in the classroom.

Insights: A Multi-Faceted Approach to Systemic Support. Ultimately, this study illuminated the dedication and resilience of mathematics educators in the face of systemic challenges. Their experiences underscored the urgent need for institutions to provide greater support, fostering a research culture that empowers teachers to not only improve their own practice but also contribute to the advancement of mathematics education in the Philippines. In summary, the educators' primary motivator stemmed from a genuine desire to improve their learners' lives, focusing on strategies to enhance comprehension, reduce anxiety, and promote equity. However, these educators faced considerable challenges, including time constraints due to heavy workloads and limited resources, particularly in public schools and part-time positions. To overcome these obstacles, they demonstrated resourcefulness and relied on collaboration, sharing ideas and leveraging networks for support. Despite the hardships, research engagement brought significant rewards, most notably witnessing learners' "lightbulb moments" and experiencing professional growth. Ultimately, the study highlighted the dedication and resilience of these educators, emphasizing the urgent need for institutional support to foster a research culture that empowers them to advance mathematics education in the Philippines.

Recommendations

Based on the study's findings, several key recommendations were directed towards various stakeholders to enhance mathematics educators' research engagement. School administrators were encouraged to prioritize resource allocation, including funding and protected time, to support educators-led research initiatives, and to establish clear, transparent research approval processes to minimize administrative burdens. Furthermore, administrators should foster a school-wide culture of inquiry by celebrating research accomplishments, promoting collaboration, and providing platforms for educators to share their findings. Mathematics educators, in turn, were encouraged to integrate research methodologies and findings into their curriculum, equipping future educators with the necessary skills and knowledge for meaningful research. They were also advised to mentor aspiring educator-researchers, fostering their confidence and expertise, and to create collaborative research projects connecting pre-service educators with experienced researchers. Mathematics learners were encouraged to actively seek research opportunities, develop strong research skills, and view research as a valuable tool for professional growth, enhancing their teaching skills and contributing to mathematics education. Finally, future researchers were urged to conduct further investigations into the factors influencing mathematics educators' research engagement, exploring diverse perspectives, and to develop and evaluate interventions promoting research engagement, while disseminating findings to inform policy and practice.

Research Output

Comprehensive Strategic Plan

I. Vision:

To cultivate a thriving and equitable culture of research engagement across all levels of the education system, empowering practitioners and policymakers to systematically integrate research evidence into their work, ultimately improving educational outcomes for all learners.

II. Mission:

To establish and sustain systemic enablers – including resources, structures, processes, incentives, and leadership – that support the active participation of all stakeholders in research, promoting a shared understanding, collaborative knowledge production, and evidence-informed decision-making.

III. Guiding Principles:

- A. Systemic Approach: Recognize that research engagement is a complex, multi-faceted issue that requires a coordinated and integrated approach across all levels of the education system.
- B. Equity and Inclusion: Ensure equitable access to research opportunities and resources for all stakeholders, regardless of their background, role, or institutional affiliation.
- C. Relevance and Responsiveness: Prioritize research that addresses the most pressing needs and challenges facing the education system, ensuring that research is relevant to the everyday realities of practitioners and policymakers.
- D. Capacity Building and Empowerment: Invest in developing the research skills and knowledge of all stakeholders, empowering them to critically evaluate, interpret, and apply research evidence effectively.
- E. Collaboration and Partnership: Foster strong partnerships between researchers, practitioners, policymakers, and community members to promote shared ownership of research and ensure that research findings are translated into actionable solutions.
- F. Sustainability and Continuous Improvement: Create sustainable structures and processes that support ongoing research engagement, ensuring that research use becomes an integral part of the education system's culture and practices.

IV. Strategic Goals and Objectives:

A. Goal 1: Enhance Research Literacy and Skills Across the Education System

- Objective 1.1: Systematically teach and practice essential research engagement skills for all actors.
- Objective 1.2: Upskill policymakers in research production skills.

B. Goal 2: Foster Enabling Mindsets and Quality Interactions

- Objective 2.1: Nurture enabling mindsets among all actors, including motivation, willingness to implement changes, and trust and understanding with other actors.
- Objective 2.2: Build stable relationships and quality interactions between stakeholders.

C. Goal 3: Ensure Adequate Resources and Infrastructure

- Objective 3.1: Provide sufficient resources of various types to support research engagement.
- Objective 3.2: Develop and maintain adequate infrastructure.

D. Goal 4: Strengthen Incentives and Recognition

- Objective 4.1: Enhance teachers' and policy makers' incentives to learn to engage with research thoughtfully, and researchers' incentives to engage with these actors.
- Objective 4.2: Promote research engagement and other knowledge mobilization activities.

E. Goal 5: Establish Solid Foundations on Structures & Processes

- Objective 5.1: Establish and maintain stable mechanisms - processes and structures that support and enhance a culture of research use, at the system and organizational level.
- Objective 5.2: Tap into existing structures and processes.

F. Goal 6: Steering the System? On Leadership

- Objective 6.1: Develop system leadership and networked leadership.
- Objective 6.2: Develop leaders to become role models of evidence-use.

V. Implementation and Evaluation:

- A. Establish a steering committee with diverse representation (researchers, practitioners, policymakers) to oversee the implementation of the strategic plan.
- B. Develop a detailed action plan with timelines, responsibilities, and measurable outcomes for each objective.
- C. Regularly monitor progress and evaluate the effectiveness of the plan, using both quantitative and qualitative data.
- D. Disseminate findings and best practices to inform future research engagement initiatives and promote continuous improvement.

VI. Success Indicators:

- A. Increased participation in research activities by practitioners and policymakers.
- B. Improved research literacy and skills among stakeholders.

- C. Increased use of research evidence in decision-making and practice.
- D. Stronger collaboration and partnerships between researchers, practitioners, and policymakers.
- E. A more positive and supportive culture for research engagement within the education system.
- F. Increased learner achievement and improved educational outcomes.

The strategic plan provides a comprehensive framework for creating a sustainable culture of research engagement, ultimately leading to improved outcomes for learners and the education system as a whole.

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