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Original Article

Empowering Educators: Evaluation of Teachers' Needs for Extension Program Design

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Abstract. This study explores the professional development needs of teachers in the MIMAROPA region, with a focus on technology integration and curriculum instruction in English, Mathematics, and Science. Amid the Philippines' persistent low performance in international assessments such as PISA and regional disparities in literacy and educational resources, understanding teachers' specific challenges is critical. Using qualitative interviews, the research identifies key gaps in digital skills, pedagogical strategies, and resource utilization. Findings highlight teachers' demand for targeted, context-sensitive training programs that enhance instructional effectiveness and learner engagement. The study emphasizes the importance of aligning extension services with local teachers' needs to improve educational quality and student outcomes. Results provide a data-driven foundation for developing sustainable professional development initiatives tailored to empower educators in resource-constrained and diverse settings.

Keywords: *Professional development; Technology integration; Curriculum and instruction; Teacher needs assessment.*

The Philippines continues to face many challenges in education, especially in English, Math, and Science. In the 2022 PISA test, which measures the skills of 15-year-old students around the world, the Philippines ranked near the bottom—77th in reading (which includes English skills), 76th in math, and 79th in science out of 81 countries (OECD, 2023; Department of Education [DepEd], 2023). Filipino students scored much lower than the average of other countries, showing that they are about five to six years behind their peers in these important subjects (Philippine Star, 2025). Even though efforts were made to improve teaching and the curriculum, early reports indicate that the country may still score below average in the 2025 PISA test (BusinessWorld, 2025; Philippine Star, 2025). These results clearly show the need to improve how English, Math, and Science are taught to help students keep up.

In the MIMAROPA region—which includes provinces such as Oriental Mindoro and districts such as Bongabong South District—there are successes but also many challenges. Studies show that young learners in this region have improved their problem-solving and reading skills, with Oriental Mindoro scoring close to the regional average (International Journal of Arts, Sciences and Education, 2024). However, the literacy rate in Oriental Mindoro remains low compared to the national average—only about 84.2% can read and write well, while the national average is 90% (Philippine Information Agency [PIA], 2025; Philippine Statistics Authority [PSA] RSSO

MIMAROPA, 2023). This means many students, especially in faraway and Indigenous communities, do not get the same support or quality education. Teachers in these areas often lack sufficient training or materials, especially in Science and Math, which affects how well students learn (DepEd MIMAROPA, 2024).

Providing teachers with the proper training is very important for improving educational quality. Conducting needs assessments helps identify which skills teachers lack, enabling training to focus on those areas (Kokoç, 2024). For example, many teachers need help improving their digital skills and learning how to use new AI tools in teaching (Kokoç, 2024). Also, non-formal education—such as workshops outside regular classes—can provide flexible ways for teachers to grow and improve (Azli et al., 2024). Teachers who keep learning and trying new methods, including through research, become better at teaching.

Training programs tailored to specific needs have been shown to help teachers perform better and improve student learning. However, there is a lack of up-to-date information about what teachers in local areas really need. Many studies examine either general training or specific skills, but do not combine them to design better programs that truly fit what teachers face every day. This study uses interviews with teachers to get detailed information about what they need to improve their teaching, especially in using technology and teaching English, Math, and Science well. The goal is to build training programs based on real needs so teachers can improve their skills, teach more effectively, and help students learn better. By matching training to teachers' actual needs, this study aims to support more meaningful and lasting improvements in education.

Methodology

Research Design

This study utilizes a qualitative research design, specifically employing in-depth interviews to conduct a needs assessment among teachers. Qualitative research is ideal for exploring complex social phenomena and understanding subjective experiences in context (Sage Journals, 2023; Scribbr, 2025). Through this approach, rich, detailed data on teachers' professional development needs can be gathered, providing insights that are impossible to achieve through quantitative measures alone. The rationale for choosing qualitative inquiry is its flexibility and its ability to capture the depth of participants' perspectives, enabling the design of an extension program grounded in actual needs.

Participants and Sampling Technique

The participants are purposively selected teachers employed at the chosen educational institution who have at least one year of teaching experience. This purposive sampling ensures that participants can provide informed, relevant responses about their professional development needs (Sage Journals, 2023). Teachers with less than one year of experience are excluded, as they may not yet have sufficient exposure to identify their needs comprehensively.

Research Instrument

Data collection will use a researcher-designed semi-structured interview guide developed from a review of the literature on teacher needs assessments (Scribbr, 2025). The instrument includes open-ended questions to elicit detailed information about areas where teachers feel they need further training or support, their preferences for extension program content, and perceived challenges. Content validity of the instrument will be established through expert review, and a pilot test will be conducted with a small number of teachers outside the main sample to refine question clarity and relevance.

Data Gathering Procedure

Interviews will be conducted face-to-face over two weeks, each lasting approximately 30 to 45 minutes. They will be audio recorded with participant consent, supplemented by field notes to capture nonverbal cues. This face-to-face approach allows for clarification of responses and deeper probing while building rapport with participants. The data-gathering timeline and setting are designed to accommodate teachers' schedules and ensure high-quality data collection.

Data Analysis Procedure

Thematic analysis will be employed to analyze interview transcripts, following systematic coding procedures that identify patterns, categories, and emergent themes related to teachers' developmental needs (Sage Journals, 2023; Scribbr, 2025). Trustworthiness will be addressed through member checking, where participants validate the

interpreted findings, and triangulation using field notes. Peer debriefing with colleagues and the researcher's reflective journaling will further enhance credibility and reliability.

Ethical Considerations

Ethical approval will be secured from the relevant institutional review board before data collection. Informed consent will be obtained from all participants, with clear explanations of the study aims, voluntary participation, confidentiality, and the right to withdraw at any stage without penalty. Data will be anonymized and securely stored to protect privacy. Participants' identities will be coded to ensure confidentiality in all reporting.

Results and Discussion

Technology-Related Needs

Teachers expressed a strong need not only for general digital literacy and for using AI tools but also for practical skills in preparing educational materials, such as PowerPoint presentations, document layout, and multimedia, to enhance instructional delivery. Many participants indicated that while they are familiar with introductory presentation software, they lack advanced skills for creating engaging and visually appealing lessons. One teacher remarked, "*I can make simple slides, but I really want to learn how to design presentations that keep students interested and are easy to follow*."

This need aligns with findings from Talakoub (2020), who emphasized that effective digital professional learning includes practical, job-embedded skills such as multimedia content creation and graphic design that help teachers produce quality learning resources tailored to their students' needs. Similarly, Digital Promise (2022) highlights that personalized professional development should address teachers' capacity to find and create engaging resources, including mastery of the technical aspects of presentation design and digital storytelling. Furthermore, teachers reported challenges managing the time and cognitive load involved in preparing these materials, suggesting that training in efficient workflow techniques and the use of templates or design tools would be highly beneficial. The literature also notes that digital professional learning is more effective when it combines synchronous facilitation with asynchronous practice opportunities, allowing teachers to apply their new skills gradually and reflect on their effectiveness in the classroom (Talakoub, 2020).

In addition to skill-building, several teachers expressed a desire to develop their ability to collaborate and share digital resources within professional learning communities (PLCs), which can provide ongoing peer support and collective problem-solving for content creation challenges (Digital Promise, 2022). Facilitators skilled in managing online and hybrid learning environments are critical to sustaining these communities. Extension programs should incorporate hands-on workshops on advanced presentation preparation, layout design, and multimedia use, along with strategies to manage the preparation workload efficiently. Supporting teacher collaboration through digital professional learning communities will further strengthen skill development and resource exchange, leading to sustained improvement.

Curriculum and Instruction Needs in English

The findings reveal a critical need for English teachers to enhance their pedagogical repertoire by integrating new technology-based applications alongside diverse, evidence-based teaching strategies and adaptive materials. Teachers reported that traditional rote and lecture-driven instruction no longer sufficiently engages students, particularly those with mixed proficiency levels and varied learning preferences. They emphasized the importance of adopting technology-enhanced approaches, such as AI-powered language learning tools that provide personalized feedback on grammar, pronunciation, and usage. One teacher shared, "I *want to learn how to use apps that can tell my students where they make mistakes in real time, so I do not have to correct everything manually*." Platforms leveraging machine learning algorithms adapt exercises to individual learning paces, enabling more effective language acquisition (Syncsci, 2025). Additionally, immersive technologies such as virtual and augmented reality were noted as promising tools for simulating real-life conversational settings, thereby improving students' communicative skills in context (British Council, 2024). A participant expressed hope that "*virtual reality can make language practice less intimidating and more fun, especially for shy students*."

Beyond technology, teachers expressed a strong desire to implement learner-centered strategies such as Communicative Language Teaching and Task-Based Language Teaching, which promote authentic interaction and problem-solving within the language learning process (Pedagogy-Driven Digital Integration, 2025). These strategies encourage active student participation through debates, simulations, and project-based activities,

fostering fluency and critical thinking. One educator noted, "*When students are part of activities like group debates or role plays, they seem more motivated and speak more confidently*." Educators also acknowledged the effectiveness of blended and flipped classroom models, where digital multimedia resources supplement face-to-face interaction to deepen comprehension and application (Ghavifekr & Wan Rosdy, 2015). Collaborative and peer-assisted learning techniques were highlighted for their ability to scaffold diverse learners through social engagement and cooperative tasks. Another teacher explained, "*Pair work and peer feedback help my students learn from each other, especially those who are struggling*."

In terms of materials, there was a significant call for training on creating and using varied, adaptive resources that enhance motivation and accommodate multiple learning styles. Teachers seek assistance in developing multimedia-rich presentations, interactive digital content, and authentic materials such as podcasts, current news articles, and videos that expose students to real-world English. Reflecting this, one teacher remarked, "*I want to make lessons more interesting with videos and podcasts, but do not know how to select or create the right materials*." The integration of AI-assisted content generation tools was seen as particularly valuable for producing leveled reading passages and differentiated exercises tailored to individual learner needs, helping to reduce teacher preparation time while personalizing instruction (Syncsci, 2025). Alongside these digital resources, educators highlighted the continuing relevance of well-designed print materials — including leveled worksheets, graphic organizers, and scaffolding tools — to support students with varied literacy backgrounds.

Teachers also recognized the importance of culturally and linguistically responsive teaching by embedding local and global cultural content into lessons through literature, storytelling, and topical discussions facilitated by both digital and print media. One participant reflected, "*When lessons connect to my students' lives and cultures, they participate more actively*." They seek guidance on connecting classroom activities with real-world applications, such as writing formal emails or participating in mock interviews, to enhance learner engagement and relevance.

Finally, the participants emphasized the value of professional collaboration and reflective practice as mechanisms for sustained growth. They advocated for structured professional learning communities to share resources, observe peer teaching, and collectively design instructional materials. Integrating reflective activities such as lesson recordings and feedback cycles would further enhance instructional effectiveness and adaptability. "*Sometimes I feel isolated in my teaching practice*," a teacher admitted, "*so having a group to share ideas and get feedback would really help me improve."*

Collectively, these articulated needs underscore the necessity for extension programs that holistically blend cutting-edge technology training with a broad spectrum of instructional strategies and resource development. Such programs would empower teachers to provide personalized, engaging, and culturally relevant English instruction, thereby fostering improved learner outcomes in increasingly diverse and digital learning environments.

Curriculum and Instruction Needs in Mathematics

The mathematics teachers interviewed expressed a strong need for professional development that enhances both their mathematical content knowledge and instructional strategies to improve student understanding and engagement. One teacher commented, "*Sometimes I find it difficult to explain abstract concepts like fractions or algebra in ways my students can really understand*." This reflects a common challenge in making complex mathematical ideas accessible through relatable examples and varied instructional approaches.

Consistent with these experiences, recent literature underscores the importance of supporting teachers in mastering math content and applying differentiated instruction techniques (SimpleK12, 2025). Teachers reported that many students struggle not only with mathematical procedures but also with underlying language skills needed to solve word problems. One participant said, "*Many students can do calculations but get stuck when they have to interpret the problem itself.*" Professional development that integrates language support with math instruction was therefore deemed critical.

Participants also highlighted the need for training in formative assessment and data-informed instruction. This includes learning to use assessment data to identify students' difficulties early and tailor instruction accordingly. One teacher remarked, "If *I could better analyze my students' errors and misconceptions, I could adjust lessons before they get too far behind*." These sentiments align with findings in the Future Directions report (2025), emphasizing the

role of data literacy in enabling responsive teaching.

Addressing student math anxiety and motivation also emerged as a priority. Teachers shared concerns about learners' negative attitudes toward math: "*Many students believe they are not 'math people,' and this mindset holds them back*." Teachers expressed interest in strategies that foster positive mathematical identities, such as using games or collaborative learning to build enjoyment and confidence (Future Directions for Mathematics Education Research, 2025).

Regarding instructional strategies, teachers requested workshops on inquiry-based learning and real-world applications to make math more relevant. One educator explained, "*When I use examples from everyday life, like budgeting or sports statistics, students seem to understand and care more*." This aligns with the positive impacts of contextualized instruction found in multiple studies (Nguyen, Do, & Le, 2025; Schoen et al., 2024).

Technology integration was another focal point; teachers want to learn to use digital tools, such as interactive math software and apps, to enhance conceptual understanding and engagement. "*If I had more training using tools like Prodigy or virtual manipulatives, I could offer more engaging lessons tailored to individual needs*," said a participant. This reflects current advances in the use of ICT in math education, as documented by Pham and Tran (2025).

Finally, teachers emphasized the value of collaborative professional learning—including coaching, mentoring, and peer observation—to sustain growth and share best practices. One teacher remarked, "*Working alongside a coach who observes my class and provides feedback helps me improve more meaningfully*." Such support structures are increasingly recognized as essential to effective professional development (Schoen et al., 2024).

In summary, the need for comprehensive mathematics professional development is clear: building more profound content knowledge, employing evidence-based pedagogies, leveraging data and technology, addressing learner attitudes, and fostering professional collaboration. Extension programs tailored to these priorities promise to enhance both teacher capacity and student outcomes.

Curriculum and Instruction Needs in Science

The analysis of teachers' interviews revealed a critical need for professional development (PD) that strengthens both content knowledge and pedagogical skills, tailored explicitly to science teaching. A recurrent theme was the challenge of translating complex scientific concepts into accessible, inquiry-based learning experiences that actively engage students. One teacher noted, "*My biggest struggle is creating hands-on experiments that connect theory to real-world phenomena, especially with limited resources*." This highlights a need for training that supports practical, standards-aligned instruction incorporating student-centered, inquiry-driven approaches (AAAS ARISE, 2020).

Research emphasizes that practical science PD should focus on discipline-specific induction and continuous learning opportunities, particularly for early-career teachers. Support that includes science mentors, access to high-quality instructional materials, and learning communities positively influences teachers' ability to foster interactive, standards-based science environments (Luft et al., 2011, as cited in AAAS ARISE, 2020). Teachers in this study echoed the importance of such sustained, collegial support, with one stating, "*Having a mentor helped me think differently about how I deliver lessons and how I support students' understanding*." This aligns with findings that mentoring and scaffolded induction are essential for the transition from theory to practice in science classrooms.

Moreover, teachers expressed the need for PD to address challenges posed by evolving curricula and the integration of technology. One participant explained, "*The curriculum changes fast, and sometimes I do not feel fully equipped to implement the new content or use technology effectively in my lessons*." Such concerns are supported by current literature advocating for flexible, context-specific PD models that incorporate emerging technologies and align with national standards and assessment systems (International Journal of Innovative Development and Policy Studies, 2025; UNESCO, 2022). Teachers also identified a gap in training on formative and summative assessment techniques suitable for science, which are critical for monitoring student learning and guiding instruction.

The importance of creating collaborative professional learning communities and engaging in reflective practice was strongly emphasized. Teachers shared that regular interaction with peers fosters the sharing of best practices, curriculum resources, and strategies for troubleshooting teaching challenges. A teacher reflected, "*Group*

workshops and peer observations opened my eyes to different ways of explaining concepts I thought were fixed." Research supports that collaborative PD enhances instructional quality and promotes sustained teacher growth, which in turn positively impacts student outcomes (Vangrieken et al., 2017).

Finally, professional development was viewed not only as a means to improve individual teacher skills but also as fundamental to building a productive and innovative society. Teachers recognized their role in cultivating scientific literacy, which is essential for 21st-century skills such as critical thinking, problem-solving, and digital competency, and aligns with global workforce demands (International Journal of Innovative Development and Policy Studies, 2025; Darling-Hammond et al., 2017). Consequently, extension programs that are continuous, needs-based, technology-integrated, and collaborative were regarded as vital investments.

Conclusion

This study contributes valuable insights into the comprehensive professional development needs of teachers across technology integration and curriculum instruction in English, Mathematics, and Science. Its findings underscore the critical importance of designing extension programs that blend advanced digital tools, learner-centered pedagogies, and culturally responsive materials to empower teachers and improve student outcomes effectively. The implications for practice and policy include prioritizing sustained, context-specific professional learning opportunities embedded within school systems, supported by adequate infrastructure and collaborative frameworks such as mentoring and peer learning communities. For education research, this study highlights the need to investigate the long-term effects of technology-enhanced professional development and the influence of teacher attitudes on its successful implementation.

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References

Azli, N.S.S., Pek, L.S., Kusnek@khusni, H., Yob, F.S.C., et al. (2024). Conceptualizing non-formal education's impact via engaging learning activities for children's education. Quantum Journal of Social Sciences and Humanities, 5(3), 100–109. https://doi.org/10.55197/qjssh.v5i3.372

Bhandari, P. (2025). What is qualitative research? | Methods & examples. Scribbr. https://www.scribbr.com/methodology/qualitative-research/

Chong, C.S. (2024). Ten trends and innovations in English language teaching 2024. British Council. https://tinyurl.com/422au56x

Darling-Hammond, L., Hyler, M., & Gardner, M. (2017). Effective teacher professional development. Learning Policy Institute. https://tinyurl.com/mvxspnyb

Devasena, R., Lakshmi, S., Rachel, D., Babu, H., & Faustina, J. (2025). Pedagogy-driven digital integration in English language teaching: A holistic approach. AIP Conference Proceedings. https://pubs.aip.org/aip/acp/article/3270/1/020221/3343976

Digital Promise. (2022). Providing professional development for teachers. https://tinyurl.com/46djfthm

Edu, N. (2025). Enhancing teachers' professional development for more productive society. International Journal of Innovative Development and Policy Studies, 13(1), 197–203. https://tinyurl.com/3wsn8c34

Ghavifekr, S., & Wan Rosdy, W.A. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. International Journal of Research in Education and Science, 1(2). https://files.eric.ed.gov/fulltext/EJ1105224.pdf

Insorio, A., & Librada, A.R. (2025). Enhancing students' academic performance by making the mathematics learning experience meaningful through differentiated instruction. Contemporary Mathematics and Science Education, 6(2), ep25008. https://doi.org/10.30935/conmaths/16332

Kokoç, M. (2024). Teachers' digital skills in research and AI tool use. Je-LKS: Journal of e-Learning and Knowledge Society, 20(1), 1–11. https://doi.org/10.20368/1971-8829/1136092

Lim, W.M. (2024). What is qualitative research? An overview and guidelines. Australasian Marketing Journal. https://doi.org/10.1177/14413582241264619

Luberger, C. (2025). Math teacher professional development guide for 2025. simpleK12. https://www.simplek12.com/blog/math-teacher

Luft, J. (2020). Supporting newly hired science teachers for continuous learning. AAAS ARISE. https://tinyurl.com/mrmps8cr

Neupane, B.P., Paudel, P., Dahal, N., Karki, S., et al. (2025). English language teaching in the age of artificial intelligence: Tools, techniques, and methodologies. Advances in Mobile Learning Educational Research, 5(1), 1356–1369. https://doi.org/10.25082/AMLER.2025.01.011

OECD. (2023). PISA 2022 results: Philippines country profile. https://tinyurl.com/wnhjz636

Paolucci, C., Edwards, A., Nucci, D., Getz, A., et al. (2024). Future directions for mathematics education research, policy, and practice. WestEd.org. https://files.eric.ed.gov/fulltext/ED663766.pdf

Pham The, Q., Nguyen Ngoc, T., Dao Thi, H., & Duong Thi, H. (2025). Factors influencing high school teachers' use of ICT in teaching mathematics: Insights from Northern Vietnam. Contemporary Mathematics and Science Education, 6(2), ep25010. https://doi.org/10.30935/conmaths/16437

Philippine Star. (2025). PH expected to rank low again in PISA 2025.

Philippine Statistics Authority, Regional Statistical Services Office (PSA RSSO), MIMAROPA. (2023). Literacy rate among household population five years old and over in MIMAROPA Region. https://tinyurl.com/m2myvdn8

Schoen, R., LaVenia, M., Tazaz, A., Gersten, R., & Smolkowski, K. (2024). Effects of a mathematics teacher professional development program on Grades 3–5 student achievement: A multisite cluster-randomized trial. Journal of Educational Psychology, 116(6), 1010–1028. https://doi.org/10.1086/732783

Sugay, J.J., III. (2025). Oriental Mindoro vows to strengthen education programs for IPs. Philippine Information Agency. https://tinyurl.com/y4t46rbh

Talakoub, C. (2020). Digital professional learning for K–12 teachers: Literature review and analysis. WestEd. https://files.eric.ed.gov/fulltext/ED610097.pdf

UNESCO. (2022). The role of teacher professional development in quality education. https://tinyurl.com/mwyew5zr

Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2017). Teacher communities as a context for professional development: A systematic review. Teaching and Teacher Education, 61, 47-59. https://doi.org/10.1016/j.tate.2016.10.001