

Sparking Young Minds: Experiences And Strategies of Elementary School Teachers in Cultivating Students' Problem-Solving Skills

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Abstract. Problem-solving is a crucial skill in 21st-century learning, and elementary teachers play a vital role in its development among young learners. This qualitative study examined the lived experiences and strategies employed by elementary school teachers in developing students' problem-solving skills. Using a phenomenological approach, in-depth interviews were conducted with ten elementary teachers, and thematic analysis was applied to analyze the data. The findings revealed three key themes related to teachers' experiences: learner diversity, collaborative learning, and the integration of technology. In terms of strategies, teachers employed peer interaction, contextualized instruction, and adaptive teaching to foster problem-solving. Additionally, the study identified localization practices and ongoing professional support as significant insights gained from the participants. Grounded in Sociocultural Theory and Constructivist Theory, the study highlights how social context and active learning influence teaching approaches. The findings emphasize the importance of culturally relevant pedagogy, supportive professional environments, and flexible instruction in promoting students' problem-solving abilities. Thus, this study provides valuable insights for educational leaders, school administrators, and teacher training institutions to enhance classroom practices and support systems.

KEY WORDS

1. Problem-solving skills
2. elementary school teachers
3. lived experiences
4. strategies
5. education

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1. Introduction

Relying on just one method limits flexibility and creativity. One must need diverse and suitable tools and strategies to solve every unique problem one faces. With this, problem-solving skills are fundamental in Philippine education, it is emphasized across curriculum frameworks, pedagogies, and strategies aiming at developing critical thinking and real-life application of skills among learners. Problem-solving skills are reinforced through the K-12 Curriculum and integrated throughout various subjects like Science, Technology, and Mathematics. As an educator, great importance is placed upon fostering students' problem-solving skills for it equips and prepares them as they venture further in their educational journey. Globally, problem-solving skills and creativity interventions were emphasized through the Creative Problem Solv-

ing (CPS) framework developed by students from Malaysia to perform better after addressing the low performance in the Program for International Student Assessment (PISA) in CPS compared to other subjects. It implied that mathematics and solving problems with peers foster creativity, and group discussion reinforces thinking and expression. Moreover, students view mathematics as interesting and more engaged in creative ways in dealing with problem-solving through collaboration (Khalid et al., 2020). Meanwhile, in Oman, Mathew et al. (2019) introduced the PROSOLVE game into an introductory programming (IP) course to enhance the problem-solving skills of beginning programmers. The findings revealed that the use of technology helped many learners better understand programming concepts, frameworks, and problem-solving strategies. Additionally, it suggests that integrating such technology can make learning more enjoyable for students. Also in Indonesia, Ahdhianto, et. al., (2020) explored how problem-based learning (PBL) influences the mathematical problem-solving abilities and critical thinking skills of fifth-grade students in comparison to traditional teaching methods. Results showed that students who engaged in problem-based learning (PBL) achieved higher post-test scores than those who followed traditional teaching methods. This suggests that PBL is an effective approach for enhancing mathematics learning in elementary schools. Similarly in the Philippines, Valdez and Bungihan, (2019), aimed to assess the effectiveness of the problem-based learning (PBL) method in improving the problem-solving abilities of Grade 9 students in Chemistry at a public high school in the Philippines. The results indicated that the problem-based learning (PBL) approach was effective in improving students' problem-solving skills. Furthermore, it was found that PBL is more successful in developing these skills compared to traditional, non-problem-based learning methods. In Man-

daue City, Cebu, Moneva, Miralles, and Rosell (2020) explored the relationship between senior high school students' problem-solving attitudes and their critical thinking abilities. The results revealed that students with a strong problem-solving attitude are better equipped to handle challenges in their daily lives, especially complex issues. They rely on critical thinking to find the most effective solutions. Additionally, having a positive attitude towards problem-solving boosts students' self-confidence when facing difficulties. It highlights that problem-solving attitude and critical thinking skills are closely interconnected, both playing essential roles in addressing academic and real-life problems. Developing these skills is key to students' future success. In Carmen West District, Division of Bohol, Jala (2020) examined the relationship between reading comprehension levels, problem-solving skills, and academic performance. The results showed that reading comprehension plays a key role in enhancing students' academic achievement and their ability to solve problems. The results suggest that students' competence in reading comprehension is closely linked to both their academic and problem-solving performance. Furthermore, the findings indicate a correlation between mathematical problem-solving and reading comprehension, highlighting that reading helps students articulate their mathematical thinking. Thus, reading comprehension serves as a predictor of problem-solving performance, and vice versa. In the local landscape, Dumigsi and Cabrella (2019) examined the effectiveness of using Strategic Intervention Material (SIM) as a remedial tool in Mathematics for Grade 9 students from Digos City National High School, specifically focusing on problem-solving related to quadratic functions. The results demonstrated that SIM significantly improved students' academic performance in Mathematics. Integrating SIM into lessons where students showed the least mastery helped enhance their mathematical abilities

in solving quadratic function problems. This intervention material not only supports the development of essential mathematical knowledge and skills but also facilitates the application and transfer of learning. Also, in a school in Davao City particularly Matina District, most of the result of the students' assessment on solving problems were considered poor. This was the result of their misunderstanding of the context of the problems, particularly in the field of Mathematics. Therefore, this qualitative study aims to delve into the experiences and strategies employed by elementary school teachers in developing students' problem-solving skills. The research seeks to uncover the pedagogical approaches used by teachers to foster problem-solving skills, as well as the challenges they encounter and the strategies they adopt to overcome these obstacles. Studying and developing students' problem-solving skills is an investment in the future of society. It equips students with the tools they need to thrive in their academic journey, in a complex world, contribute to positive change, and build a more prosperous and sustainable future. With that, this research aims to understand the challenges of the teachers in cultivating their learners problem-solving skills and also to provide valuable insights and recommendations for educators, policymakers, teachers, and parents to implement programs, offer support, and disseminate the findings in order to illuminate aspects of cultivating students' problem-solving skills in elementary settings.

- (1) What are the lived experiences of elementary school teachers in cultivating students' problem-solving skills?
- (2) What are the strategies of elementary school teachers in order to cultivate their student's problem-solving skills?
- (3) What insights can be formulated from the findings of the study?

Teachers – This study's findings will benefit teachers by providing insights into effective strategies for enhancing students' problem-solving skills, ultimately enriching their instructional practices.

1.1. Purpose of the Study—This phenomenological study investigates and analyzes the experiences and strategies utilized by elementary school teachers for cultivating students' problem-solving skills. The study provides useful insights into the techniques used by teachers during their learning activities. In the end, the study would increase my understanding of how to effectively utilize the strategies that are targeted at cultivating students' problem-solving skills. The central objective of this data collection revolved around capturing the real-life experiences of elementary school teachers as they ignite their students' problem-solving skills. The outcomes of this phenomenological study provide us with a deeper understanding of the precise strategies that teachers employ to enhance the students' learning. Furthermore, I would assess the efficacy of these strategies in elevating the problem-solving skills of young learners. The valuable insights obtained from this study possess the potential to exert a positive influence on various aspects of inclusive education and educational policies aimed at cultivating empowering and supportive learning environments within classrooms.

1.2. Research Questions—This study unfurls the experiences and strategies of elementary school teachers in cultivating students' problem-solving skills. The research is carried out with the purpose of addressing the following inquiries:

Students – The findings of this study on cultivating students' problem-solving skills will contribute significantly to the existing body of

research, providing valuable insights for educators, policymakers, and future researchers.

1.3. Operational Definition – For a more comprehensive understanding, the following terms were described operationally.

Problem-solving skills – It refers to the ability of students to identify problems, brainstorm and analyze answers, and implement the best solutions. It allows individuals to identify the source of an issue and find effective solutions (University of Washington, 2022). In the context of this study, problem-solving skills refer to the skills of the students to implement the best solutions to problems they encounter during learning. This skill is necessary for them to be able to analyze problems and seek solutions for it.

Scaffolding – It refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process (Glossary of Education Reform, 2019). In the study, scaffolding refers to the support given by teachers to the students. Scaffolding allows teachers to extend support to the students, especially in cultivating their problem-solving skills. Taking into consideration the cited problem situation, I found it timely to conduct this study. This brought the necessity to conduct an inquiry about the experiences and strategies of teachers in cultivating their students' problem-solving skills, as well as insights that are deemed necessary and useful. I hope that this study enlightens the identified sectors of the academe. This includes the educational leaders, school heads, teachers, other stakeholders, and future researchers.

1.3. *Review on Significant Literature*—This review presents significant studies on teachers' experiences and strategies in cultivating students' problem-solving skills, organized into key themes: experiences, strategies, and insights.

1.3.1. *Teachers' Experiences in Cultivating Problem-Solving Skills*—Problem-solving is foundational to cognitive and social development in elementary learners, fostering adaptability, critical thinking, and emotional intelligence (Wu Molnar, 2022; Beaumont et al., 2023). Teachers support this by integrating inquiry-based and cooperative learning, guiding students through open-ended tasks and reflective thinking.

Engaging students is vital. Interactive methods like collaborative learning, positive teacher-student relationships, and technology integration increase engagement and enhance problem-solving (Larson, 2020; Mallik, 2023; Bond, 2019). Culturally relevant pedagogy further connects learning to students' backgrounds, increasing motivation (Ladson-Billings, 2020).

Professional development equips teachers with effective strategies (Darling-Hammond et al., 2020). Assessments like observations and self-evaluations provide feedback to refine instruction (Skinner et al., 2019).

Teachers often manage diverse learning paces using differentiated instruction and formative assessments, improving inclusion and student confidence (Williams, 2023; Hattie Donoghue, 2020). Adaptive technology helps personalize learning (Echevarría et al., 2020), while collaborative learning enhances peer support (Johnson Johnson, 2020).

Teacher training in differentiation and mindset-building fosters resilience and perseverance (Safa, 2021; Dweck, 2019). Together, these approaches shape inclusive classrooms that nurture problem-solving skills.

1.3.2. *Strategies for Cultivating Problem-Solving Skills*—Peer interaction develops both cognitive and social-emotional skills through collaborative discourse, guided by clear teacher facilitation (Roseth et al., 2020; De Lemos et al., 2021; Leeuwen Janssen, 2019). Technology enriches this interaction by connecting students across contexts (Vali, 2023), while professional

development supports its implementation (Muir Geiger, 2021).

Real-world problem-solving engages students through relevant, interdisciplinary tasks that promote autonomy and higher-order thinking (Farrow et al., 2022; Thomas, 2021; Kim et al., 2022). Interdisciplinary links—e.g., in STEM or environmental studies—deepen learning and prepare students for real-life challenges (Beers, 2020; Bell, 2019).

Scaffolding and gradual release allow students to build independence. Techniques like modeling, questioning, and feedback support diverse learners (van de Pol et al., 2021; Doo, 2020). Scaffolding also promotes metacognitive awareness and self-regulation (Karpov Haywood, 2020), especially when enhanced with technology (Barata et al., 2022).

Insights from Teachers' Experiences and Strategies Studies emphasize that real-world, collaborative, and reflective learning fosters problem-solving across domains—from early education to STEM and business (Hammond et al., 2020; Khan et al., 2022; Hmelo-Silver et al., 2020; Jonassen, 2020). Critical thinking is central to these skills, cultivated through collaborative problem-solving and problem-based learning (Brewer, 2025; Liu et al., 2020; Xu et al., 2023).

Technological tools and AI enhance engagement and relevance, promoting analysis and decision-making (Balingit, 2020). A growth mindset and a reflective environment further empower learners to persevere and adapt (Dweck Yeager, 2020).

In summary, teachers play a crucial role in cultivating students' problem-solving and critical thinking by combining real-world application, collaboration, reflection, and inclusive, student-centered strategies. These approaches prepare learners to thrive in complex, dynamic environments.

1.4. Significant of the Study—Cultivating students' problem-solving skills is a complex

process shaped by teachers' ongoing efforts to create meaningful and engaging learning experiences. The collective pieces of literature cited in this segment underline that educators adapt their strategies to support critical thinking, encourage active participation, and promote thoughtful reflection rather than following a fixed approach. Furthermore, these studies highlight the importance of providing students with opportunities to connect their learning to real-life contexts, interact with peers, and develop confidence in their abilities. As students engage in these learning environments, they gradually build the skills needed to approach challenges with creativity, resilience, and informed decision-making. This continuous process reinforces the role of problem-solving as a vital element in shaping learners who can adapt and thrive in a changing world.

1.5. Theoretical Lens—The theoretical underpinning of the study was anchored on Lev Vygotsky's Sociocultural Theory (1978, as cited from McLeod, 2024). At the heart of Vygotsky's theory is the concept of the Zone of Proximal Development (ZPD), which describes the difference between what a learner can do without assistance and what they can achieve with guidance. One relevant term attached to ZPD is scaffolding. Scaffolding refers to support that teachers or more knowledgeable peers provide to help learners accomplish tasks that cannot complete independently. This support is temporary and gradually removed as learner becomes more competent, allowing them gain independence in their learning process. In the context of the present study, the theory provides a structured approach that supports learners as they navigate complex tasks. By leveraging the concept of the Zone of Proximal Development (ZPD), educators can identify the specific areas where students need assistance and tailor their support accordingly. By providing appropriate levels of support and gradually encouraging independence, teachers help students develop

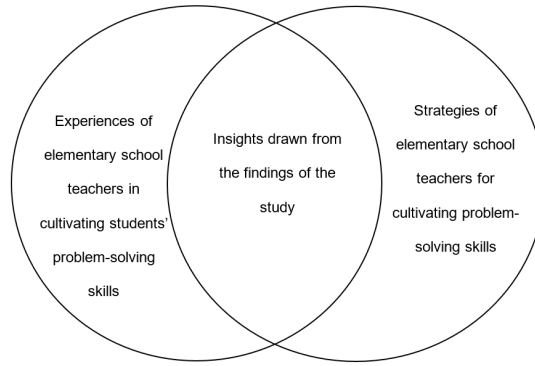


Fig. 1. Conceptual Framework of the Study

the confidence and skills necessary to approach challenges proactively. Hence, I employed this theory in my study for it will aid my understanding of how teachers integrate strategies in cultivating students' problem-solving skills. The study is further reinforced by Jean Piaget's Constructivist Theory (1973, as cited by Chand, 2024). The theory posits that learners actively construct their own understanding and knowledge through experiences. In a constructivist classroom, students are encouraged to explore, ask questions, and engage in hands-on activities, which enhances their problem-solving skills. By building on their prior knowledge and expe-

riences, students develop deeper insights into problems and learn to apply their knowledge in various contexts. As applied in the context of the study, the Constructivist Theory grasped the essence of the study. In a constructivist classroom, students are encouraged to be inquisitive and tactile learners. As teachers try to cultivate students' problem-solving skills, they encourage them to ask questions, solve real-world problems, and learn on their own. Thus, I would utilize this theory to fully comprehend what strategies teachers employ for their students' problem-solving skills.

2. Methodology

This chapter effectively addresses the specific objectives of the study by outlining the systematic procedures and methodologies used in phenomenological research. It also explains the selected research design and the roles I played as the researcher throughout the study's implementation. Moreover, it offers thorough insights into the research subjects, clarifying their procedures and selection standards. The chapter concludes by exploring the techniques used for data collection, analysis, and strategies used to uphold ethical standards during the research.

2.1. Philosophical Assumptions—A study's philosophical and qualitative presumptions are vital in steering the investigation. Four fundamental assumptions form the bedrock for comprehending qualitative research: ontological, epistemological, axiological, and methodological. These assumptions establish the groundwork for the research design and

inform the researcher's approach to the study. A paradigm is a broad framework or perspective that guides and shapes how researchers approach their studies, formulate research questions, gather data, analyze findings, and interpret results. It encompasses a set of beliefs, assumptions, methodologies, and theoretical foundations that influence how researchers concep-

tualize and conduct their research (Zukauskas et al., 2018). In this research, the paradigm guided the choice of methodology, methods, and techniques, shaping the overall research process and ensuring coherence in the study.

Ontology – This section of the study focuses on the relationship between the problem and reality. According to Creswell and Poth (2018), ontology can be defined as the study of the nature of reality. The authors also assert that the research participants' perceptions of reality are varied and subjective. This study acknowledges the complex, multifaceted nature of reality as experienced by elementary school teachers. Their lived experiences, as they navigate the challenges of cultivating students' problem-solving skills reveal the intricate web of meanings and interpretations that underpin their professional existence. Through thematic analysis, this research seeks to uncover the underlying ontological assumptions that shape elementary teachers' understanding of their role, their students, and the context in which they teach. By examining the teachers' experiences and strategies, this study aims to illuminate the fundamental nature of reality as it relates to teaching, learning, and the development of students' problem-solving skills.

Epistemology – Epistemology deals with the nature of knowledge and the relationship between the knower and the known. According to Creswell and Poth (2018), the researcher made an effort to reduce the gap between them and the participants based on the epistemological premise. Through an immersive and participatory approach, this study employs a qualitative methodology to gain intimate insight into the experiences and strategies of elementary school teachers. By embracing an insider perspective, I aim to co-construct knowledge with the participants, acknowledging the subjective and contextual nature of their realities.

Axiology – It concerns the influence and importance of my values as a researcher in this

study. According to Creswell and Poth (2018), acknowledging and openly discussing the researcher's values that shape the study is crucial. The values which influence how data are interpreted and presented are explicitly acknowledged in the research process. This study is grounded in a deep respect for the inherent value and dignity of each participant's narrative. As a researcher, I am committed to upholding the highest ethical standards, ensuring that the experiences and strategies of elementary school teachers are treated with sensitivity, integrity, and transparency.

Methodology – According to Crotty (2020), this is "the strategy, plan of action, process, or design lying behind the choice and use of particular methods and linking the choice and use of the methods to the desired outcomes." Its objectives are to explain, assess, and defend procedures. This qualitative study employs an in-depth, phenomenological approach to explore the experiences and strategies of elementary school teachers in cultivating students' problem-solving skills. A qualitative methodology is chosen for its ability to capture the richness, complexity, and nuance of participants' experiences. Specifically, this study utilizes in-depth interviews as the primary data collection technique. This approach enables a detailed, contextualized, and empathetic examination of participants' narratives, allowing for a deeper understanding of their experiences and strategies.

Rhetoric – In research, rhetoric is the skillful and convincing use of language, communication strategies, and presentation tactics to effectively communicate concepts, claims, and conclusions in order to sway the audience's opinion and comprehension of the study (Beqiri, 2018). This study employs a narrative approach that not only respects the voices of the participants but also presents the findings in a clear, compelling, and accessible manner. Through the strategic use of language, I aim to establish a rhetorical connec-

tion with the audience, fostering empathy and understanding of the participants' experiences and strategies in cultivating students' problem-solving skills. I ensure that the participants' stories are conveyed with accuracy, sensitivity, and depth. This approach enables the research to resonate with its intended audience, facilitating a deeper understanding of the findings and their implications.

2.2. Qualitative Assumptions—Using phenomenological research methodology, my goal is to explore the experiences and strategies of elementary school teachers in fostering their students' problem-solving skills. My objective is to gather information about their experiences, strategies, and values in relation to the phenomenon I am studying. Utilizing phenomenology as my guiding qualitative framework, I seek to uncover the essence and significance of the roles played by these individuals, emphasizing their unique viewpoints and the intricate details of their experiences. As the study's qualitative researcher, I supported a level of investigation that goes beyond cursory observations. To uncover the intricate and multifaceted nature of challenges faced by elementary school teachers in cultivating students' problem-solving skills, my study employs a qualitative approach that prioritizes depth and contextual richness. Specifically, I utilize in-depth interviews and reflective dialogues to gather nuanced and detailed accounts from participants. Through a phenomenological lens, I analyze participants' narratives to identify the essence of their experiences, gaining insight into their perceptions, thoughts, and feelings. This approach enables me to capture the complexities and subtleties of the teachers' experiences, strategies, and insights in fostering students' problem-solving skills.

2.3. Design and Procedure—Determining the precise approach used in a study is crucial in order to customize the best research design, data collection strategy, and data analysis approach

to the study's objectives. I used a qualitative research design in this investigation. Hammersley (2013, cited in Aspers and Corte, 2019) states that studies characterized by verbal rather than statistical analysis are appropriate for qualitative research. Since I studied the lived experiences, strategies, and insights of elementary school teachers in fostering their students' problem-solving skills., the qualitative design was the most appropriate. This means that rather than establishing or refuting theories, I described and elaborated on this phenomenon. There are, however, specialized methods used in qualitative research, including grounded theory, narrative, case studies, phenomenology, and ethnography. Using a qualitative phenomenological research design, I explored the lived experiences of the participants in this particular setting. I selected this approach because, according to Asper's (2009, cited in Aspers and Corte, 2019) work, the scientific side of phenomenological research focuses on communicating the viewpoints of the subjects and the importance of their experiences, then applying scientific concepts to analyze these perspectives. Furthermore, according to Creswell (2018), a phenomenological study is a method of inquiry that describes the complex and collective experiences of the participants with respect to a particular phenomenon. A key idea in phenomenology is to reduce one's interpretations of a particular phenomenon to a description that can be applied to all situations. Therefore, my goal is to identify a phenomenon that revolves around the participants' experience about forging students' problem-solving skills. I will collect information from people who have direct experience with this phenomenon in order to create detailed and accurate descriptions.

2.4. Ethical Considerations—Ethical considerations are crucial because they relate to the moral principles and guidelines that govern my conduct as a researcher. These principles ensure that I carry out my investigations responsibly,

treating participants with respect and striving to generate reliable and precise information. To protect participants, maintain scientific integrity, and foster trust within the research community, I adhere to established ethical standards in my research practices (Resnik, 2020).

Social value – This concerns the potential benefits and favorable outcomes that research can bring to society, like addressing problems or improving people’s quality of life. This study recognizes its societal value by addressing a critical need in education: enhancing students’ problem-solving skills. By investigating effective strategies for improving these programs, this research has the potential to create a positive impact on the broader community. The findings of this study can inform evidence-based practices, ultimately benefiting students, educators, and schools. By elevating students’ problem-solving skills, this research can contribute to the development of skilled competent, and equipped students to engage critically in their meaningful learning process.

Informed Consent – This involves obtaining a participant’s voluntary agreement to participate in a research study after they have been provided with sufficient information about the study’s purpose, methods, potential drawbacks, and benefits. In conducting this research with elementary school teachers in cultivating students’ problem-solving skills, I prioritize transparency, autonomy, and dignity. I ensure that participants are fully informed about the study’s objectives, procedures, and potential benefits, particularly in relation to cultivating students’ problem-solving skills. Participants will be explicitly informed about their rights. This informed consent process respects the teachers’ autonomy and dignity, acknowledging their expertise and contributions to the field of learning pedagogy.

Vulnerability – The vulnerability of research participants, in this case, the teachers, pertains to their increased risk of experiencing harm, ex-

ploitation, or coercion due to factors such as age, cognitive ability, or socioeconomic status. As a researcher investigating the experiences and strategies of elementary school teachers in cultivating students’ problem-solving skills, I recognize the potential vulnerability of these educators. To protect their well-being and privacy, I implement rigorous safeguards and support mechanisms. These measures include obtaining informed consent, ensuring confidentiality, and clearly explaining participants’ rights and the study’s procedures in an accessible manner. I also adapt my research methods to minimize potential adverse effects, prioritizing the well-being and dignity of the elementary school teachers throughout the study. By doing so, I foster a safe and respectful research environment that values the contributions and expertise of these educators.

Risks, Benefits, and Safety – In research, it is essential to carefully evaluate the potential risks and benefits associated with participation in a study, as well as to implement measures that safeguard the well-being of participants. These elements involve assessing the potential disadvantages and advantages of participating in a study, along with establishing strategies to ensure the welfare of participants. In this investigation of elementary school teachers in cultivating students’ problem-solving skills, I carefully weighed the potential benefits and risks. Recognizing the coaches’ expertise and vulnerabilities, I implement robust precautions to minimize potential harm and ensure participants’ safety. This meticulous approach is essential for upholding ethical standards and safeguarding the well-being of elementary school teachers throughout the research process. By prioritizing their safety and dignity, I foster a trustworthy and respectful research environment that values their contributions to the field pedagogy.

Privacy and Confidentiality – Privacy and confidentiality in research are about safeguarding participants’ personal information and en-

surings their identity remains confidential unless they explicitly consent to disclosure. In conducting this study on elementary school teachers, I acknowledge the importance of maintaining confidentiality and protecting participants' sensitive information. To ensure the privacy and anonymity of the teachers, I implement rigorous data protection protocols. These measures include anonymizing data, encrypting and securely storing information, and restricting access to authorized personnel only. By upholding the highest standards of data confidentiality and integrity, I safeguard the trust and participation of elementary school teachers, ultimately ensuring the credibility and validity of this research.

Justice – This concept relates to the equitable allocation of both the advantages and disadvantages resulting from research across various segments of society. In this study, I prioritize inclusivity and equity. Recognizing the diversity of educators, I ensure that the research design and methods avoid exploiting or excluding vulnerable groups, such as those from linguistically diverse backgrounds or with varying levels of teaching experience. To promote fairness and equity, I strive to make the research benefits accessible to all stakeholders who could gain from them, including elementary school teachers, students, and the broader educational community.

Transparency – Transparency in research encompasses maintaining integrity at every phase of the study, from its conception and execution to the reporting of results. In this study, I am committed to transparency, providing clear, accurate, and unbiased information regarding my research methodologies, data collection procedures, and findings. By being transparent about my research processes and outcomes, I ensure that all stakeholders, including educators, students, and policymakers, have access to reliable and comprehensible information. This commitment to transparency promotes collaboration, informed decision-making, and the advancement

of knowledge in the field of learning pedagogy and students' development in terms of problem-solving skills.

The Qualification of a Researcher – The qualification of a researcher relates to one's academic background, professional experience, and proficiency in a particular area of study, ensuring that one possesses the requisite abilities and knowledge to conduct the research competently. In this investigation, I hold suitable qualifications that showcase my capability to conduct research, analyze data, and interpret the results. My expertise and training provide the foundation necessary to approach this study with a rigorous scientific method and critical analytical skills, ensuring the integrity and validity of the findings.

The Adequacy of Facilities – This addresses the presence and suitability of the essential resources, tools, and infrastructure required to execute a study efficiently and securely. In this study, I ensure access to suitable facilities and resources necessary for conducting in-depth interviews, observations, and data analysis. This access enables me to collect and analyze data in a secure, comfortable, and distraction-free environment, thereby promoting the credibility and consistency of the findings. By utilizing appropriate facilities, I minimize potential risks and discomfort to study participants, including elementary school teachers. Moreover, this ensures that the research process adheres to the highest standards of integrity, safety, and ethics, ultimately contributing to the validity and reliability of the research outcomes.

Community Involvement – This encompasses the dynamic involvement and active engagement of community members, stakeholders, or the intended study population throughout the research journey, from initial planning to sharing research outcomes. In this study, I prioritize community engagement and collaboration. By actively involving elementary school teachers in the research process, I ensure that the study

remains relevant, acceptable, and impactful. By engaging with the community, I not only produce more effective and meaningful research outcomes but also contribute to the development of contextually relevant strategies for improving students' problem-solving skills.

Plagiarism and Fabrication – Researchers should strictly follow principles of academic honesty and integrity. This entails giving proper credit to the work of others, presenting original contributions, and verifying the accuracy and authenticity of data. In this study, I employ tools like plagiarism detectors and maintain thorough documentation of my research procedures to ensure that my work is devoid of plagiarism and that all data and discoveries are authentic and reliable. By upholding these principles, I enhance the credibility and trustworthiness of the research community.

2.5. Research Participants—Qualitative analyses typically require a smaller sample size than quantitative analyses. Qualitative sample sizes should be large enough to obtain feedback for most or all perceptions. Obtaining most or all perceptions leads to the attainment of saturation. Saturation occurs when adding more participants to the study does not result in additional perspectives or information. Glaser and Strauss (2017) as cited in Hennink and Kaiser (2022) recommend the concept of saturation for achieving an appropriate sample size in qualitative studies. For phenomenological studies, Creswell (1998) recommends 5 to twenty-five. According to Subedi (2021), larger samples in qualitative studies hinder an in-depth exploration of the study phenomenon. There are no specific rules when determining the appropriate sample size in qualitative research. Qualitative sample size may best be determined by the time allotted, resources available, and study objectives (Patton, 2002 as cited in Mullet, 2018). With this, the participants of this study will be ten (10) elementary school teachers from three (3) different schools within Matina Dis-

trict, Davao City. These schools are the following: Ciriako Mariano Elementary School, New Matina Elementary School, and Matina Central Elementary School. To gather a more diverse and in-depth understanding of the experiences and strategies of elementary school teachers in fostering their students' problem-solving skills, three (3) participants will be selected from Ciriako Mariano Elementary School and New Matina Elementary School and the other four (4) participants are from the Matina Central Elementary School. This selection process ensures that the study captures a broad range of perspectives allowing for a more comprehensive examination of fostering students' problem-solving skills. The participants will be chosen based on the following criteria: they must be currently teaching in one of the five schools within Matina District, they must be teaching for three years or more, they must handle grades of five or six students, garnered a high score in the COT, they must have employed problem-solving techniques in their classroom, and willing to participate in the study.

2.6. Research Instrument—In this phenomenological study, the primary research instrument was the researcher, who played a central role in collecting and interpreting the data. To gain an in-depth understanding of the experiences and strategies employed by elementary school teachers in cultivating students' problem-solving skills, a semi-structured interview guide was used. This guide was thoughtfully designed to prompt open-ended responses, allowing participants to express their perspectives, instructional practices, and reflective insights in rich detail. The questions were closely aligned with the study's research inquiries and allowed room for follow-up prompts, ensuring both consistency and flexibility during the interviews. This approach enabled the collection of meaningful narratives that captured the essence of the participants' lived experiences, contributing to a deeper understanding of the phenomenon from

their perspective.

2.7. Role of the Researcher—As an unbiased research facilitator and promoter, I am responsible for ensuring that the research process is conducted fairly, objectively, and without personal bias, prejudice, or influence from outside sources. In this study, I cultivate a research environment that values openness, honesty, and fairness. By doing so, I encourage participants to share their authentic experiences and perspectives. By maintaining objectivity and avoiding undue influence, I generate trustworthy insights that can inform evidence-based practices, ultimately contributing to the betterment of students' problem-solving skills and overall learning pedagogy. My commitment to impartiality ensures that data collection and analysis are conducted without bias, prejudice, or agenda. This rigorous approach upholds the integrity of the research process, yielding reliable and representative findings that accurately reflect the complexities of cultivating students' problem-solving skills. As an expert in qualitative methods, I am familiar with various qualitative research techniques, such as interviews, focus groups, and participant observation. In conducting this qualitative study on elementary school teachers in cultivating students' problem-solving skills, I draw upon my expertise in designing, conducting, and analyzing in-depth interviews, observations, and thematic analysis. My proficiency in qualitative research methods enables me to investigate complex social phenomena, such as the dynamics of elementary school teachers in enhancing their students' problem-solving skills. As a data collector and keeper, I gather information from various sources such as interviews or observations, and I ensure accurate and secure storage of this information. In conducting this research, I adhere to ethical guidelines to safeguard participants' privacy and confidentiality. I ensure that all data, including interview transcripts, observation notes, and documents, are accurately

recorded, securely stored, and anonymized to protect participants' identities. This meticulous data management approach maintains the integrity of the research process, enabling the production of credible, reliable, and generalizable findings. As a data analyst, I analyze the gathered data to discover trends, patterns, and valuable perspectives in accordance with the research query. I utilize meticulous qualitative data analysis methods like coding and thematic analysis to extract significant findings and enrich the knowledge base within my discipline. In this qualitative study on elementary school teachers, I employ rigorous data analysis methods, including coding, thematic analysis, and constant comparison. These meticulous approaches enable me to meticulously examine the data, identify patterns, and uncover nuanced insights that contribute meaningfully to the existing body of knowledge. Finally, as an organizer and presenter of data, I am tasked with synthesizing and communicating the research findings concisely and coherently. In disseminating the findings of this study on elementary school teachers and students' problem-solving skills, I prioritize clarity, accessibility, and practical applicability. I present the results in a clear, concise, and engaging manner, avoiding technical jargon and ensuring that the implications and recommendations are easily understandable. By doing so, I facilitate the effective communication of the research outcomes to the intended audience, including educators, policymakers, and scholars in the field of education. This approach enables the findings to be not only shared but also understood, applied, and built upon, ultimately contributing to the advancement of knowledge and the improvement of practices for students' problem-solving skills.

2.8. Data Collection—In the gathering of data, this study will employ a systematic procedure. Several steps were taken in adherence to the proper data collection procedure. This was done in order to ensure the accuracy and

objectivity of the data collection. The following is the step-by-step process of gathering the data needed.

Securing Endorsement from the Dean of Graduate School, the Schools Division Superintendent, and the School Principal – To initiate the data collection process, I will secure endorsements from key stakeholders including the Dean of the Graduate School, the Schools Division, and the Superintendent, the School Principal. This process involves submitting formal letters outlining the research objectives and methodology, accompanied by any supporting documents. This crucial step will take place within the first two weeks of March 2025, ensuring that all necessary permissions are in place before proceeding with the collection of data. This proactive approach not only facilitates compliance with ethical standards but also fosters a cooperative environment among all parties involved.

Asking Permission from the Schools Division Superintendent – Upon receiving the endorsement, I will request permission from the school's division superintendent. This requires submitting a formal letter detailing the research proposal and its significance to the educational community. Along with the letter, I attached Chapters 1 and 2 of my dissertation and the research instrument, clearly explaining the study's objectives and the process of participant identification. Moreover, I will wait for the response from the Schools Division Superintendent (SDS) before proceeding with the data collection. This step will be undertaken during the last two weeks of March 2025, ensuring that all necessary approvals are in place to conduct the research ethically and effectively.

Asking for Permission from the School Heads – Once permission is granted, I sought approval from the school heads of the selected institutions. This step involves submitting formal request letters to each school head, outlining the research's purpose and the expected data

collection timeframe. I will ask for permission to conduct the study from the first week of April 2025 to the last week of the same month.

Obtaining Consent from the Participants – With the school heads' approval, I will ask for consent from the research participants, through informed consent forms. These forms clearly explain the purpose of the research, participant rights, and confidentiality measures. This consent process ensures that the participants are fully informed and agree to participate. Asking for consent from both participants will be done in the first week of April 2025.

Conducting the Interview – Upon securing consent from all participants, I will schedule and conduct the interviews using a structured or semi-structured interview guide to ensure consistency and reliability in data collection. The interviews will take place in the second week of April 2025.

Transcribing the Responses of the Interviewees – Following the interview sessions, I will meticulously transcribe the interviewees' remarks, taking diligent account of non-verbal cues and contextually relevant details. This procedure will use audio recordings and field notes to comprehensively capture the breadth of participants' reactions. The transcription of interviewee responses will be done on the first week of May 2025.

2.9. Data Analysis—After collecting the data, I embarked on data coding and thematic content analysis. This involves methodically structuring the transcribed data into categories, subcategories, and themes from the interview dialogues. By discerning patterns and connections within the data, I formulate conclusions and glean insights directly related to the research objectives. This process allows me to interpret the data effectively, ensuring that the findings accurately reflect the experiences and strategies of the participants which are elementary school teachers. In this study, I employed Creswell's Thematic Analysis approach, which is partic-

ularly suited for encompassing a range of perspectives and portrayals in participants' feedback. Adopting thematic analysis authenticates the portrayal of individual components and facilitates the categorization of identified patterns within the provided responses. Thematic analysis is a qualitative research technique used to recognize, scrutinize, and interpret patterns or themes present within qualitative data in textual, visual, or other formats. As a qualitative research approach, thematic analysis allows researchers to systematically arrange and dissect complex data sets. It involves searching for overarching themes that encapsulate the narratives embedded within the data. This process necessitates the identification of themes through meticulous examination and repeated review of transcribed data (Dawadi, 2020). This methodical approach helps ensure that the analysis is both comprehensive and reflective of the data collected, providing deep insights into the study's objectives. Therefore, I used Creswell's Thematic Analysis in my research, which necessitated extensive theming and transcript interpretation. According to Caulfield (2020), there are multiple essential phases in Creswell's Thematic Analysis, including familiarization, coding, generating themes, reviewing themes, defining and labeling themes, and writing up. To gain insight into the experiences and strategies of elementary school teachers in cultivating their students' problem-solving skills, I conducted a thorough analysis of the data. I carefully reviewed the teachers' responses to identify patterns and relationships in their approaches to teaching problem-solving skills. Then, I grouped similar ideas together to form themes. I refined these themes to ensure they accurately captured the complexities of teachers' experiences and strategies. Finally, I combined the themes and insights into a clear and concise narrative that summarizes the study's findings on the experiences and strategies of elementary school teachers in cultivating their students'

problem-solving skills. The analytical framework in phenomenological research is a methodical and structured approach to data analysis, interpretation, and presentation. In this research study, I made use of Colaizzi's method to analyze data from the interviews and discussions with the participants regarding their lived experiences in fostering students' problem-solving skills. According to Morrow et al. (2021), Colaizzi's (1978) method features a distinctive seven-step process that offers a rigorous analysis, closely adhering to the data at each stage. This method culminates in a concise yet comprehensive description of the phenomenon under study, which is validated by the participants who experienced it. The effectiveness of this approach relies on rich first-person accounts of experiences, which can be collected through various means. Although face-to-face interviews are common, data can also be gathered from written narratives, blogs, research diaries, online interviews, and other forms. This method enables researchers to uncover emergent themes and explore the intricate relationships between them (Wirihana et al., 2018).

Data Familiarization – Through iterative readings and re-readings of the interview transcripts, I meticulously analyze the narratives of elementary school teachers, aiming to distill a rich understanding of their experiences, perspectives, and strategies for enhancing their students' problem-solving skills. This rigorous review process allows me to immerse myself in the data, gaining a nuanced and contextualized understanding of the complexities and challenges faced by coaches in fostering effective strategies for students' problem-solving skills. By repeatedly engaging with the transcripts, I am able to identify subtle themes, patterns, and meanings that might have otherwise gone unnoticed, ultimately facilitating a more sophisticated and insightful analysis of the teachers' experiences and practices.

Identifying Significant Statements –

Through a systematic and meticulous examination of the interview transcripts and written narratives, I identify and extract specific statements made by elementary school teachers that directly pertain to their strategies for enhancing students' problem-solving skills. This rigorous process involves carefully combing through the data to pinpoint phrases, descriptions, and anecdotes that shed light on the coaches' experiences, strategies, and insights in fostering students' problem-solving skills.

Formulating Meanings – Upon identifying key statements from the narratives of elementary school teachers, I meticulously interpret the meanings embedded within these statements, focusing on those that pertain to their strategies for enhancing students' problem-solving skills. To maintain an authentic and participant-centered analysis, I engage in bracketing, acknowledging and setting aside my own biases and assumptions.

Clustering Themes – I ensure a rigorous analysis that remains true to the participants' experiences by grouping the identified meanings into themes that are shared by all accounts. Throughout this process, presuppositions must be bracketed, especially to avoid any possible influence from existing theories. By letting the themes naturally arise from the data rather than being influenced by outside forces, this preserves the integrity of the analysis.

Developing an Exhaustive Description – I synthesize the themes that emerged from the narratives of elementary school teachers into a comprehensive and nuanced description of their experiences and strategies for enhancing

students' problem-solving skills. By integrating these themes, I create a rich and detailed portrait that captures the essence and complexity of the teachers' experiences, strategies, and insights in fostering students' problem-solving skills. This exhaustive description ensures that the final representation presents a multifaceted perspective on the teachers' experiences, acknowledging the diversity and depth of their narratives.

Producing the Fundamental Structure – I break down the comprehensive description of elementary school teachers' experiences and strategies into a concise, yet meaningful, statement that encapsulates the fundamental elements essential to understanding the complexities of improving students' problem-solving skills. This succinct synthesis effectively communicates the core of the teachers' experiences, focusing on the critical components that are vital to grasping the phenomenon's underlying structure.

Seeking Verification of the Fundamental Structure – I ask participants if the fundamental structure statement accurately reflects their experience, either by returning it to all participants or, in larger studies, to a subsample. I might go back and change the earlier stages of the analysis in light of their comments. Through this iterative process, the validity and credibility of the findings are increased, and the analysis is kept firmly based on the perspectives of the participants. The following figure illustrates this rigorous process, highlighting each step to comprehensively explain the actions taken to comprehensively analyze the data.

2.10. Trustworthiness of the Study—The trustworthiness of a study is about how reliable, sensible, and authentic the research results are, ensuring that the conclusions are trustworthy and accurate. In qualitative research, factors like credibility, transferability, confirmability,

and dependability are often used to evaluate how reliable the study is. These considerations are further described below, according to Guba (1981).

Credibility – Building credibility entails proving that the results are accurate. Credibility

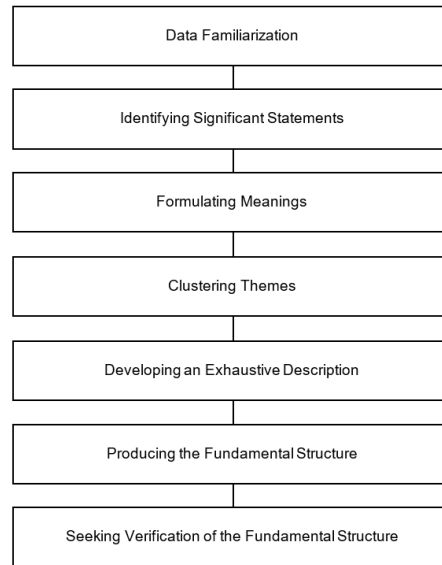


Fig. 2. Analytical Framework of the Study

is important for this study because it evaluates if the results accurately represent the realities and elementary school teachers in fostering their students' problem-solving skills. To ensure the accuracy and trustworthiness of the findings, I engage in prolonged conversations with elementary school teachers, gathering rich, contextualized insights into their experiences and strategies for enhancing their students' problem-solving skills. Additionally, I employ triangulation, collecting data from multiple sources, including in-depth interviews and supplementary questionnaires. To further validate the interpretations, I conduct member checking, sharing a preliminary draft of the findings with the participant coaches. This iterative process enables me to confirm, refine, or revise my understanding, ensuring that the final results accurately reflect the teachers lived experiences and strategies.

Transferability – The degree to which the results of this study can be used in different situations or with different populations is referred to as transferability. The transferability of this study's findings refers to their potential applicability in various contexts or with different populations. Although the insights

gained are grounded in the specific experiences of elementary school teachers, I provide a description of the research context, methodology, and participants' perspectives. This rich narrative enables educators, school administrators, researchers, and other stakeholders to assess the study's transferability, determining the extent to which the findings can be applied to similar contexts.

Confirmability – Confirmability deals with the study's objective by making sure that the respondents, not my personal prejudices or biases, shaped the findings. To ensure confirmability, I maintain methodological transparency and objectivity throughout this study on elementary school teachers' experiences and strategies in cultivating their students' problem-solving skills. I meticulously document every stage of the research process, from data collection and transcription to data analysis and interpretation, creating a comprehensive audit trail. This detailed record enables other researchers to trace the study's development, examine the decisions made, and evaluate the objectivity of the findings.

Dependability – Dependability proves that

the study results are reliable and repeatable in similar situations. To establish dependability, I ensure that the findings of this study on elementary school teachers' experiences and strategies are consistent and repeatable. I achieve dependability through meticulous documentation of the research methodology, including data collection procedures, data analysis techniques, and decisions made throughout the study. By following these standards, the research not only offers

valid and trustworthy conclusions regarding elementary school teachers in fostering their students' problem-solving skills but it also offers a framework that researchers and other educators can use to compare similar learning environments. This methodology enhances the study's standing in the academic community and provides insightful information for upcoming studies and instructional design.

3. Results and Discussion

This section of the study examines the lived experiences of elementary teachers in developing students' problem-solving skills. It focuses on the research questions and insights gathered from participants' firsthand narratives, highlighting the diverse perspectives and strategies employed by public elementary school teachers.

3.1. Experiences of Elementary Teachers in Cultivating Students' Problem-Solving Skills—In the dynamic environment of the elementary classroom, teachers often witness how learners respond to academic challenges that require critical and independent thinking. Through daily interactions and a variety of instructional activities, educators observe how students engage with tasks that demand more than rote memorization. Some learners exhibit creativity and persistence when faced with unfamiliar problems, while others may rely heavily on guidance or struggle to transfer learned concepts to new situations. These varied responses provide teachers with valuable insights into the strengths and gaps in their student's ability to navigate complex tasks. Over time, patterns begin to emerge, revealing how learners approach challenges, utilize strategies, and exhibit resilience—elements that collectively shape a clearer picture of their developing problem-solving skills. These observations are central to understanding elementary teachers' perspectives, as explored in the first research question of this study, which focuses on their insights into learners' problem-solving abilities.

Difficulties on Student Diversity – Students come with a wide range of abilities, learning preferences, and challenges. Some grasp concepts quickly, while others require more time or different approaches to understand the same material. This diversity challenges teachers to recognize and adapt to individual differences, ensuring that all students can participate meaningfully in problem-solving activities. By observing how each learner responds to tasks, teachers gain insight into the unique ways students process information and tackle difficulties. These experiences highlight the importance of flexibility and sensitivity in instruction. Reflecting on these realities, the participants shared their observations on how the diverse backgrounds and abilities of their students influenced their problem-solving skills. The respondents in this study emphasized that learner diversity presents a central challenge in cultivating problem-solving skills. They noted that students enter the classroom with a wide range of needs that influence their engagement with learning tasks. This finding is consistent with the American Institutes for Research (2021), which emphasizes the complexity of individu-

alization in classrooms. Students with anxiety, for instance, may benefit from calm, structured routines, while those with difficulties in emotional regulation may require more frequent behavioral support. Such variation in emotional profiles requires that teachers continually adjust their strategies to meet each student's needs, making learner diversity a key factor in instructional planning. In support of this, Skinner et al. (2019) advocate for the use of diverse assessment methods to understand better and respond to the differences among learners. The respondents observed that traditional assessments often fail to capture the nuanced ways in which students from different backgrounds and ability levels engage with problem-solving tasks. By incorporating tools such as teacher observations, self-assessments, and peer evaluations, teachers can better identify individual strengths and needs. This approach helps in adapting instruction to suit a diverse classroom, where students differ not only in performance but also in how they process, participate in, and reflect on learning experiences. The theme of learner diversity also extends to how students differ in learning pace and academic readiness. The respondents highlighted the difficulty of designing problem-solving activities that engage both advanced learners and those who need more support. Johnson and Johnson (2020) address this by showing how student differences can be leveraged to promote meaningful learning experiences when instructional methods are adapted. While their focus is on cooperative learning, the underlying principle remains that recognizing and responding to students' varying cognitive development is essential. In the context of learner diversity, this insight affirms that instruction must be flexible enough to challenge all learners appropriately and provide scaffolding where needed. Additionally, the respondents noted that differences in communication styles, confidence levels, and prior knowledge influence how students participate in problem-

solving activities. This observation is supported by Hmelo-Silver et al. (2020), who found that students' diverse perspectives and ways of thinking can either enrich or complicate collaborative problem-solving. When redirected toward learner diversity, their findings suggest that teachers must be skilled in navigating and mediating these differences to ensure equitable participation. Recognizing that students express reasoning and engage in discourse differently is essential for fostering inclusive and effective problem-solving environments.

3.1.1. Application of Student Collaboration —In the classroom, teachers often see how students learn more effectively when they work together. Through group tasks, peer activities, and shared discussions, learners begin to explore various ideas, articulate their thoughts, and support one another in solving problems. These moments help students become more engaged and confident while also showing teachers how collaboration builds both thinking and teamwork skills. As learners interact, their problem-solving approaches often improve. With this in mind, the participants shared their observations on how such collaborative settings shaped their students' ability to handle challenges. The respondents in this study consistently observed that collaborative learning plays a vital role in developing students' problem-solving skills. They noted that students often thrive when given opportunities to work together, as these interactions encourage them to share ideas, learn from each other, and approach tasks with greater creativity and confidence. This observation aligns with the findings of Slavin (2020), who emphasizes that cooperative learning strategies, such as think-pair-share and jigsaw, help students express their thoughts clearly, listen to their peers, and explore diverse perspectives. These structured interactions contribute significantly to students' cognitive development and enhance their ability to tackle complex problems through teamwork. More-

over, the respondents reported that collaboration supports not only academic growth but also the development of emotional intelligence. They observed that students learn essential interpersonal skills while engaging in group tasks. This finding aligns with a study by Ripley (2023), which found that collaborative learning environments contribute to students' ability to manage emotions, practice empathy, and navigate social situations effectively. The respondents noted that these emotional and social competencies became especially evident when students worked through disagreements, demonstrating the deeper impact of collaboration on personal growth and problem-solving resilience. The respondents also highlighted how group learning promotes empathy and self-regulation among students. They observed that as students interact with peers, they become more aware of others' feelings and perspectives. This is supported by the findings of De Lemos et al. (2021), who concluded that collaborative problem-solving experiences strengthen emotional intelligence by encouraging students to engage in meaningful peer interaction. According to the respondents, this type of engagement helps learners approach challenges with patience and understanding, which in turn fosters a more inclusive and effective problem-solving environment. Another key insight from the respondents was the importance of teacher guidance in collaborative activities. They found that group work was most effective when roles and expectations were clearly defined, ensuring that all students participated actively. This aligns with the conclusions of Leeuwen and Janssen (2019), who emphasized that teachers play a crucial role in shaping the quality of peer interactions. The respondents reported that by establishing classroom norms, such as active listening and respectful communication, they were able to create a positive atmosphere in which collaboration flourished, and problem-solving skills were developed more effectively. Finally, some respondents noted that

technology has become a crucial support for student collaboration. They observed that digital tools enabled students to collaborate even when separated by physical space, which was particularly useful during remote or blended learning. This observation is supported by Vali (2023), who noted that technology facilitates real-time collaboration, enabling students to co-create content, share feedback, and solve problems together through digital platforms. The respondents emphasized that when used thoughtfully, these tools can enhance the collaborative experience, ensuring that students remain engaged and connected throughout the problem-solving process.

3.1.2. Integration of Technology —As learning environments continue to evolve, teachers have increasingly turned to digital tools to support and enhance student engagement. In many classrooms, technology has become part of daily routines, helping students explore content, visualize problems, and access a range of resources that were once out of reach. When used thoughtfully, these tools can encourage learners to think critically and solve problems in more interactive and meaningful ways. Teachers observe how students respond to digital platforms, whether through educational games, research tasks, or problem-solving applications and note how technology can both challenge and motivate them. In light of these classroom experiences, the participants shared their insights on how the use of technology influenced their students' approaches to solving problems. The respondents in this study frequently observed that technology integration significantly enhances students' engagement and ability to think critically during problem-solving tasks. They noted that digital tools offer students interactive and flexible ways to approach challenges, making problem-solving more dynamic and engaging. These observations are supported by Ostby (2022), who found that students working in technology-enhanced

environments developed stronger critical thinking skills than those who used only traditional methods. The use of digital tools enabled students to access diverse resources, manipulate data, and visualize their solutions, thereby contributing to deeper cognitive engagement and more meaningful learning experiences. In addition to promoting critical thinking, the respondents recognized that technology supports individualized instruction through digital scaffolding. They reported that tools like interactive platforms provided step-by-step guidance and real-time feedback, helping students work through problems at their own pace. This observation aligns with the findings of Barata et al. (2022), who emphasized the role of technology in providing tailored scaffolding experiences. These digital environments allow teachers to address students' unique needs while encouraging collaborative problem-solving through features that promote peer interaction and continuous feedback. Another key insight from the respondents was the effect of technology on student engagement. They explained that digital simulations and interactive applications sparked interest and motivation among learners, which in turn boosted their participation in problem-solving tasks. This observation corresponds with the study by Bond (2019), who demonstrated that students engaged in hands-on, technology-supported learning experiences showed improvements in analytical thinking and creativity. These digital tools created opportunities for experimentation in a low-risk environment, where students felt encouraged to test ideas and develop problem-solving strategies. The respondents also noted that technology played a crucial role in accommodating students' varying learning paces. They indicated that adaptive learning platforms enabled students to proceed through tasks based on their readiness, reducing frustration and improving confidence. This aligns with the findings of Echevarría et al. (2020), who emphasized that

educational technology can provide personalized learning paths. These platforms support problem-solving by allowing students to work independently or collaboratively without pressure, fostering perseverance and a sense of ownership in learning. Some respondents shared that technology-enhanced collaboration in their classrooms allows students to interact meaningfully, even outside of face-to-face settings. They explained that digital tools enable students to share resources, provide feedback, and collaborate across physical spaces. This finding is consistent with the results of Barbour and Hunsicker (2020), who identified the role of collaborative platforms in enhancing teamwork and communication among students. Through these tools, teachers were able to create a more connected and cooperative learning environment, which enriched students' problem-solving experiences. In further support of this perspective, respondents described how technology extended the boundaries of classroom collaboration. They noted that students used digital platforms to engage in real-time problem-solving discussions, even when working remotely. This observation aligns with the study by Vali (2023), which found that digital tools facilitate both immediate and sustained interaction among students. These platforms promoted idea-sharing and cooperation, encouraging students to consider diverse viewpoints and collaboratively arrive at innovative solutions. Ultimately, the respondents recognized the importance of teacher preparedness in successfully integrating technology to support problem-solving. They mentioned that professional development helped them feel more confident in using digital tools to facilitate peer interaction and manage group work. This is reinforced by the findings of Muir and Geiger (2021), who emphasize that teachers require ongoing training to implement effective collaboration strategies that utilize technology. Through targeted professional learning, teachers can effectively use digital resources to create

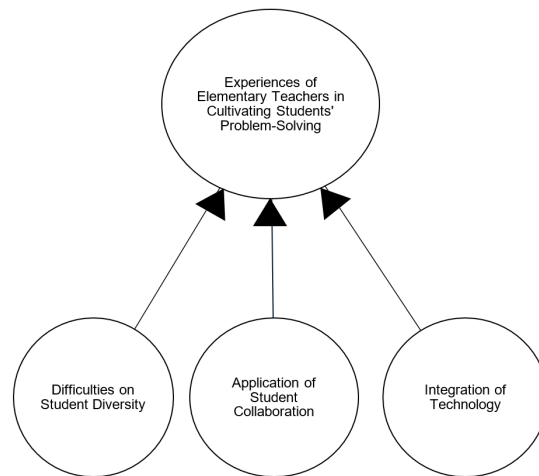


Fig. 3. Observations of Elementary Teachers in Cultivating Students' Problem-Solving Skills

productive, technology-supported environments that foster problem-solving. Presented in Figure 3 is the observation of elementary teachers in cultivating the learners' problem-solving. It en-

compasses the three emerging themes: student diversity, student collaboration, and technology integration.

3.2. Strategies of Elementary Teachers in Cultivating Students' Problem-Solving Skills — As teachers deepen their understanding of how students respond to complex tasks, they also make intentional choices in shaping classroom experiences that support the growth of problem-solving skills. These choices often involve the careful selection of strategies that present academic challenges and encourage students to think critically, explore multiple solutions, and reflect on their thinking processes. Through structured activities, guided practice, and opportunities for collaboration, teachers create environments that support and stretch learners in their cognitive development. The second research question of this study centers on these instructional decisions, focusing on the strategies elementary teachers use

3.2.1. Applying Peer Interaction in Students' Activities —Within the elementary classroom, students often learn as much from one another as they do from direct instruction. Allowing learners to share ideas, compare methods, and work together to solve challenges en-

ables them to view problems from multiple perspectives. Moreover, it fosters essential communication and collaboration skills. Teachers who recognize the value of these interactions carefully design activities that encourage meaningful dialogue among peers, thereby facilitating an environment where questioning, explaining, and negotiating become integral parts of the learning process. In such settings, students gradually develop the confidence to express their thinking and the flexibility to revise it in response to new insights. This theme is reflected in the experiences shared by participants, who described how peer interaction becomes fundamental in their strategies for developing students' problem-solving skills. Participants emphasized that students became more engaged and thoughtful when given opportunities to explore ideas with others. They observed that learning was more meaningful when students were encouraged to exchange perspectives, explain their reasoning, and build on one another's thoughts. This finding aligns with the study of Roseth et al. (2020), which highlights

how peer interaction during problem-solving tasks enhances understanding by allowing students to articulate their thinking, clarify misunderstandings, and explore diverse perspectives. These experiences not only strengthened students' knowledge of academic content but also nurtured their ability to solve problems through collaboration. The teachers highlighted how structured group tasks and shared responsibilities promoted critical thinking and independent learning. The participants' responses also reflect the importance of emotional and social development in collaborative settings. Teachers noted that students learned to listen, manage disagreements, and support one another while working on challenging tasks. These experiences helped students become more empathetic and self-aware, qualities essential for effective collaboration. De Lemos et al. (2021) support this observation, stating that students engaged in peer-based problem-solving activities tend to develop emotional intelligence, including empathy, cooperation, and self-regulation. These emotional skills are essential as they influence how students interact with their peers and contribute to a more productive and respectful learning environment. Teachers in the study also shared how they take an active role in structuring and guiding peer interaction to ensure its effectiveness. They carefully plan group tasks, set clear expectations for collaboration, and monitor student interactions to maintain a positive and focused learning atmosphere. This approach supports the findings by Leeuwen and Janssen (2019), who emphasize the importance of teacher facilitation in enhancing the quality of peer collaboration. According to their research, when teachers provide intentional structures, such as defined roles, norms for discussion, and targeted feedback, students are more likely to engage meaningfully with one another and develop stronger problem-solving skills. Moreover, participants described how inquiry-based and interactive learning ap-

proaches helped make peer interaction more purposeful. They observed that when students were encouraged to ask questions, experiment with ideas, and reflect together, their motivation and engagement increased. This finding corroborates Larson's (2020) report, which noted that elementary teachers using collaborative and inquiry-based methods observed improved student engagement and higher levels of critical thinking. These teaching strategies enabled students to take ownership of their learning while developing the reasoning and decision-making skills necessary for effective problem-solving.

3.3. Contextualizing Instruction —Connecting learning to real-life situations and students' everyday experiences makes it more relevant and engaging, fostering deeper thinking and enhancing problem-solving skills. By presenting challenges that reflect familiar contexts, teachers help students see the purpose behind the tasks and motivate them to apply their knowledge in meaningful ways. This approach enables learners to draw on their background and prior understanding, making complex problems more accessible and encouraging creative solutions. Participants in the study shared how they integrate stories, practical scenarios, and hands-on activities into their lessons to create these authentic learning experiences. Their responses reveal how contextualized instruction captures students' interest and supports the development of problem-solving skills through fostering connections between concepts and real-world applications. Participants consistently highlighted the importance of connecting lessons to real-life situations as a powerful way to engage students and develop their problem-solving skills. They explained that when challenges reflect experiences familiar to learners, students become more motivated to explore solutions and apply their thinking beyond the classroom. This perspective aligns with the findings of Moneva, Miralles, and Rosell (2020), who revealed that students with a posi-

tive problem-solving attitude coupled with critical thinking skills are better equipped to handle everyday challenges. The participants' insights underscore how fostering a constructive mindset toward problem-solving encourages confidence and resilience among learners. Teachers also shared how designing problem-solving tasks grounded in authentic contexts leads to deeper analytical thinking and heightened student engagement. Razak et al. (2022) support this view by demonstrating that context-rich scenarios enable students to develop stronger critical thinking abilities while remaining motivated to tackle complex issues. The responses of the participants reflect a shared understanding that addressing relevant, real-world problems makes learning more meaningful and promotes sustained cognitive growth in elementary students. Several participants emphasized the value of integrating real-world problems into collaborative classroom activities that foster creativity and communication. This approach is supported by Farrow et al. (2022), who found that connecting curriculum content with students' daily experiences encourages a stronger sense of purpose and involvement. By embedding authentic challenges into lessons, teachers create dynamic learning environments where students work together, practice new strategies, and develop essential social skills. Additionally, some participants noted that allowing students to select problems that resonate with their interests fosters greater ownership and autonomy in the learning process. Kim, Lee, and Chu (2022) highlight that student choice in problem selection increases investment and supports innovative thinking. The teachers' accounts illustrate how empowering students to explore issues meaningful to them promotes perseverance and creativity, key components of effective problem-solving. Furthermore, the respondents described the benefits of an interdisciplinary approach to real-world problem-solving, which connects multiple subjects and encour-

ages a holistic understanding. This perspective aligns with the research of Beers (2020), who argues that integrating areas such as science, math, and social studies through authentic problems helps students grasp the complexity of real-world issues. The participants' experiences demonstrate how integrating knowledge across disciplines enriches problem-solving skills and prepares students to think critically about multifaceted challenges. Ultimately, the participants acknowledged that engaging with real-world problems not only develops academic skills but also cultivates essential life skills, including adaptability, perseverance, and effective communication. Bell (2019) supports this by showing that authentic problem-solving experiences equip students to face uncertainty and become proactive learners. The teachers' reflections affirm that contextualized instruction prepares students not only for school success but also for responsible and capable citizenship beyond the classroom.

3.3.1. Adaptive Teaching—Teaching in a diverse classroom often requires flexibility and responsiveness. As students work through problems, they may struggle with concepts at various points, prompting teachers to adjust their methods, offer alternative explanations, or provide varied learning tools to meet individual needs. This kind of responsive instruction allows learners to persist through difficulties while developing the confidence to explore new strategies. Teachers create space for experimentation, reflection, and growth by continuously observing students and adjusting their support to meet the specific needs of each situation. The participants in this study shared how they modify their instructional approaches in real time, tailoring their support to better guide students through the problem-solving process and help them build resilience in facing academic challenges. The participants emphasized the importance of being responsive and flexible in their teaching practices to support students' effective problem-solving

development. They described how adjusting lesson delivery, pacing, and instructional support helped meet the diverse learning needs of their students. This aligns with the concept of adaptive teaching, where instruction is continuously shaped by student performance and engagement. Skinner et al. (2019) emphasize that utilizing diverse assessment methods, such as observations and self-assessments, enables teachers to gather meaningful data that inform instructional adjustments. This ongoing process allows educators to refine their strategies, aligning them more closely with student readiness and promoting sustained growth in problem-solving skills. The participants also discussed how technology serves as a practical tool for adapting instruction in real-time. By utilizing digital platforms that respond to student input and progress, teachers can provide targeted support to those who need it most. Barata et al. (2022) reinforce this approach by demonstrating that interactive learning tools provide scaffolding features tailored to students' learning paths. This supports the adaptive teaching practice of differentiating instruction to ensure that every learner engages with problem-solving activities at an appropriate level of challenge. In their responses, teachers shared how they regularly shift between instructional approaches based on the needs they observe in the classroom. Williams (2023) notes that varied teaching strategies enhance the effectiveness of adaptive instruction, allowing

educators to respond to differences in student readiness, interests, and learning styles. This flexibility enables teachers to create dynamic learning environments where problem-solving can flourish, supported by methods that evolve in response to students' needs. Participants described formative assessments as essential tools for shaping instruction. Teachers use the results of these assessments to revise tasks, modify groupings, or offer additional guidance. This supports Hattie and Donoghue's (2020) assertion that adaptive teaching relies on continuous feedback to bridge learning gaps and reinforce student strengths. Through this responsive approach, students are better equipped to develop confidence and resilience as problem solvers. Finally, participants described how educational technologies allow them to personalize instruction in ways that traditional methods sometimes cannot. Echevarría et al. (2020) emphasize that adaptive platforms create individualized learning experiences by adjusting content and pacing based on student performance. The use of these technologies, as explained by the teachers, enhances their ability to deliver adaptive teaching that supports each learner's journey toward more effective and independent problem-solving. Figure 4 shows the strategies of elementary teachers cultivating students' problem-solving skills and the emergence of the three themes: peer interaction, contextualized instructions, and adaptive teaching.

3.4. Educational Insights in Cultivating Students' Problem-Solving Skills—Developing strong problem-solving skills is essential for students as they navigate complex academic challenges and real-world situations. Fostering these abilities requires intentional educational strategies that go beyond passive learning—encouraging critical thinking, creativity, and resilience. As teachers deepen their understanding of how students respond to complex tasks,

they also make purposeful decisions in shaping classroom experiences that nurture these skills. These decisions often involve selecting methods that challenge students to analyze problems from different perspectives, engage in critical thinking and reasoning, and persevere through difficulties. Through creating supportive learning environments, promoting student agency, and addressing individual differences, educators help students build confidence and adaptability

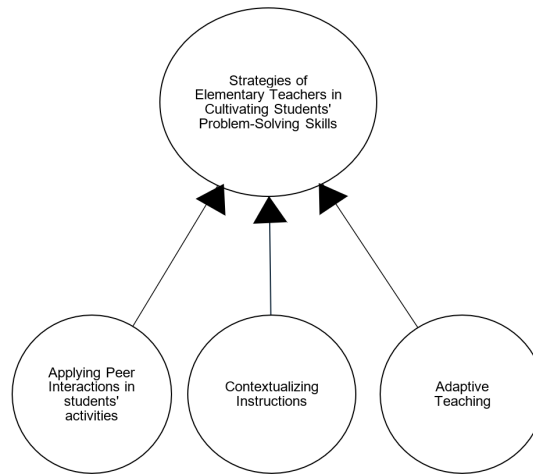


Fig. 4. Strategies of Elementary Teachers in Cultivating Students' Problem-Solving Skills

in problem-solving. The third research question of this study focuses on these broader factors, exploring how the classroom environment and student experiences influence the development of problem-solving skills in elementary learners.

3.4.1. Localization Practices—The participants emphasized the importance of continuous professional support in helping them effectively implement strategies that promote student problem-solving. This aligns with the findings of Muir and Geiger (2021), who highlighted the importance of training teachers to facilitate collaborative learning and manage group dynamics. Professional development equips educators with the skills needed to design meaningful peer interaction experiences, which in turn strengthen students' problem-solving abilities by encouraging teamwork and communication within authentic learning contexts. Similarly, the role of ongoing professional development in enhancing student engagement through active learning was underscored by the participants' experiences. Darling-Hammond et al. (2020) found that teachers who participate in sustained training focused on active learning strategies are better prepared to create classroom environments that encourage critical thinking and problem-solving. This continuous refinement

of instructional practices enables educators to foster deeper student involvement and supports learners as they tackle complex challenges. The need for professional growth also extends to managing diverse student learning needs while fostering problem-solving skills. Participants shared how targeted training helped them differentiate instruction effectively. Safa (2021) supports this by showing that ongoing professional development in differentiated instruction and problem-solving methods boosts teachers' confidence and effectiveness. Learning to use strategies such as tiered assignments and flexible grouping allows teachers to meet individual students where they are, ensuring all learners develop strong problem-solving skills. Lastly, the participants' reflections on fostering collaboration align with the findings of Muir, Deed, Thomas, and Emery (2021), who emphasized the importance of continuous professional development in cooperative learning. Teachers who participate in workshops and training programs acquire valuable techniques for creating collaborative classrooms that foster problem-solving. This ongoing support enables educators to improve their ability to guide students in working together effectively and solving problems collectively. Presented in figure 5 shows the educational insights in cultivating students'

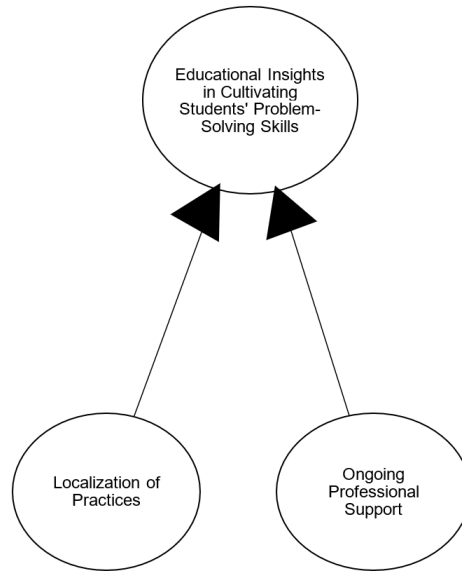


Fig. 5. Educational Insights in Cultivating Students' Problem-Solving Skills problem-solving skills and the emergence of the professional support. two themes: localization practices and ongoing

4. Implications and Future Directions

This chapter presents the significant findings of the study based on the experiences and reflections of elementary school teachers who actively work to develop their students' problem-solving skills. Through the use of a qualitative phenomenological approach, the study gathered rich insights from open-ended interviews that allowed participants to articulate their views, strategies, and realizations in the classroom setting. The responses were carefully coded and analyzed thematically to identify key patterns and recurring ideas related to the research questions.

4.1. Findings—The first area of inquiry focused on the lived experiences of elementary teachers in cultivating problem-solving skills among their students. One significant theme that surfaced was learner diversity. Teachers described their classrooms as comprising students with diverse backgrounds, learning needs, and intellectual capacities. This diversity required them to be highly observant and responsive, constantly adjusting their approaches to ensure all learners are engaged and supported. They emphasized that understanding these differences was essential to fostering a classroom where each student felt empowered to think critically and solve problems in their unique way. Another critical theme that emerged from teachers lived experiences was the importance of collaborative learning. Participants reported that encouraging teamwork and group activities helped students sharpen their problem-solving skills through the sharing of ideas and cooperative tasks. They observed that students often learn better when given the chance to work with peers, solve real-life challenges together, and reflect on multiple perspectives. The classroom, they explained, becomes a space not only for individual growth but also for collective learning. Technology integration also played a role in shaping teachers' experiences. Many participants discussed how digital tools and platforms opened up new avenues for presenting problems, engaging students in interactive tasks, and

providing instant feedback. They found that technology-enabled more dynamic and personalized learning experiences, allowing students to approach issues through simulations, games, and virtual environments that stimulate critical thinking. The second part of the study examined the specific strategies used by elementary teachers to cultivate problem-solving skills. One central theme that emerged was peer interaction. Teachers intentionally designed opportunities for students to engage in dialogue, ask questions, and explain their thinking to others. This peer-to-peer learning, they noted, was vital in helping students verbalize their ideas and discover new approaches through conversation and collaboration. Contextualized instruction also emerged as a key strategy. Teachers emphasized the value of connecting classroom tasks to real-world scenarios. By framing problems within familiar or meaningful contexts, such as local events or everyday experiences, students were more engaged and better able to apply logical reasoning. Teachers shared that this method not only enhanced students' understanding but also encouraged them to think creatively and critically. Another notable strategy was adaptive teaching. Participants shared that flexibility in instruction was essential, especially when students encountered difficulties or demonstrated varying levels of understanding. Teachers modified lesson plans, adjusted groupings, and differentiated tasks to ensure that problem-solving activities were accessible and appropriately challenging for every learner. This adaptability enabled teachers to respond in real time to students' needs, fostering a supportive learning environment. The third research question explored the insights gained from teachers' experiences and strategies. One of the central insights was the importance of localization practices. Teachers recognized the value of incorporating community knowledge, local culture, and familiar environments into their teaching. They observed that when stu-

dents could relate to the content, they were more motivated to engage with the problem-solving process. Localization not only made lessons more relevant but also deepened students' understanding of how to apply their skills beyond the classroom. The final insight focused on the role of ongoing professional support. Teachers stressed the importance of continuous learning through training, collaboration with colleagues, and access to updated teaching resources. They viewed professional development as essential in refining their approaches and staying informed about innovative methods for teaching problem-solving. Support from school leaders and opportunities for reflective practice were also mentioned as factors that strengthened their confidence and effectiveness. Overall, the themes revealed in this chapter highlight the complex yet purposeful ways in which elementary teachers cultivate problem-solving skills in their students. Through an awareness of learner differences, the use of collaborative and contextual strategies, and sustained professional support, teachers play a central role in preparing students to think critically and solve challenges both in school and in life.

4.2. Implications—The results of my analysis revealed several significant findings related to elementary teachers lived experiences, instructional strategies, and educational insights in cultivating students' problem-solving skills. A key implication is that learner diversity, collaborative learning, and technology integration play a crucial role in shaping how teachers experience and respond to students' development of problem-solving skills. These findings affirm the principles of Constructivist Theory, which emphasizes that students learn through active engagement, exploration, and interaction with meaningful content. Teachers recognized the importance of adapting their instruction to meet diverse learning needs, encouraging peer-based collaboration, and integrating technology to enhance engagement. These practices support the

constructivist view that learning is constructed both individually and socially through hands-on and contextually relevant experiences. Moreover, technology serves as both a tool and a space for cognitive growth, allowing learners to explore problems in dynamic and relevant ways. Furthermore, the identified strategies of peer interaction, contextualized instruction, and adaptive teaching highlight the practical relevance of Sociocultural Theory, particularly Vygotsky's idea that learning is mediated by social interaction and cultural tools. Teachers facilitated group-based tasks, encouraged peer-to-peer support, and adapted instruction to reflect students' real-world experiences. These strategies reflect the sociocultural belief that students progress cognitively when supported by more knowledgeable peers and guided participation within their learning communities. The teachers' adaptive techniques also illustrate their role in scaffolding student learning, enabling learners to progress within their Zone of Proximal Development. The final set of insights regarding localization practices and ongoing professional support underscores that meaningful problem-solving instruction relies on both individual effort and institutional structures. Localization practices reveal that when teachers contextualize content using community-based or culturally familiar scenarios, students become more engaged and better able to relate to complex problems. This aligns with both constructivist and sociocultural views, which value learning that is situated in real-life and cultural contexts. The call for continuous professional support shows that teachers thrive when they are part of learning communities that foster collaboration, reflection, and shared growth. These findings reinforce the sociocultural perspective that educators' development is shaped by social interaction and professional discourse. From an educational management perspective, these implications suggest that schools must support instructional practices that are culturally respon-

sive, student-centered, and socially connected. Policies should encourage professional development aligned with constructivist and sociocultural principles, offering training in adaptive teaching, collaborative strategies, and the integration of local content. Creating collaborative learning environments for both students and teachers are essential for maintaining a responsive and effective educational system. In conclusion, this study demonstrates that cultivating students' problem-solving skills relies on intentional instructional practices and a supportive social and institutional environment. The findings confirm the foundational relevance of Constructivist and Sociocultural Theories, reinforcing their value in shaping effective educational practices. By addressing these implications, schools, and academic leaders can better support elementary teachers in equipping young learners with the critical thinking and collaborative skills needed for real-world success.

4.3. Future Directions—Based on the results of this study, the insights gathered must be shared with and utilized by the primary stakeholders involved in supporting and enhancing instructional practices in elementary education.

Educational Leaders – The findings provide valuable insights for educational leaders, shedding light on the daily realities, instructional approaches, and support needs of elementary school teachers. With a deeper understanding of how teachers implement strategies such as collaborative learning, adaptive teaching, and technology integration, leaders can develop relevant training programs and capacity-building initiatives. These may focus on encouraging innovation in the classroom and fostering environments that support culturally responsive, problem-centered learning. Such actions can embed problem-solving as a key competency in the elementary curriculum.

School Heads – School administrators can draw from the study's findings to guide school-wide planning and policy development. Empha-

sizing the importance of localized instruction and the need for sustained professional development, school leaders are encouraged to establish systems that provide teachers with consistent opportunities for collaboration, reflective practice, and context-based instruction. These structural supports not only enhance instructional quality but also ensure that students receive real-world, meaningful problem-solving experiences.

Teachers – This study offers practical insights that elementary teachers can utilize to evaluate and refine their teaching practices. Strategies such as peer collaboration, contextualized teaching, and the flexible adjustment of instruction to meet student needs are all emphasized. Teachers are encouraged to create classrooms where learners are engaged through relevant content, encouraged to think critically, and supported in working with others to solve problems. These findings also underscore the importance of embracing student diversity and utilizing technology effectively to support individualized learning.

Educational Institutions – Institutions that shape and support teacher education and professional development can use the findings to enhance their training models. Emphasizing the importance of socially interactive and culturally grounded teaching, institutions can incorporate problem-solving pedagogies into both pre-

service and in-service programs. Institutional efforts may also prioritize mentorship, shared teaching practices, and community-based learning initiatives that empower teachers to respond creatively and effectively to classroom challenges.

Future Researchers – This study opens up new avenues for further exploration of how teachers influence students' development of problem-solving skills. Future research might take a broader approach by combining qualitative and quantitative methods to assess the impact and frequency of specific teaching strategies. Long-term studies could track the effects of teacher-led interventions on student performance over time. Additionally, comparative studies across various regions or school settings could provide deeper insights into how culture, community context, and institutional support influence teaching practices. In conclusion, this study provides a foundation for collective efforts by education leaders, administrators, teachers, institutions, and researchers to further develop and sustain practical approaches to teaching problem-solving in the elementary years. With intentional collaboration and continued research, schools can better equip both teachers and learners for success in complex, real-world problem-solving.

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