The Role of Digital Learning Platforms in Developing Problem-Solving Competencies among Junior High School Learners

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ABSTRACT

This study examined the role of digital learning platforms in developing mathematical problem-solving competence among Grade 7 learners of Sta. Irene National High School as perceived by students and Mathematics teachers. It responded to the need for localized evidence on how digital platforms support learners in understanding problems, devising plans, carrying out solutions, and looking back. The study employed a quantitative descriptive-survey method with comparative and correlational components. Complete enumeration was used, involving 170 Grade 7 learners and 12 Mathematics teachers. Data were gathered through researcher-made questionnaires and analyzed using frequency, percentage, weighted mean, tests of difference, and correlation at the 0.05 level. Findings revealed that Google Classroom was the most used platform, followed by Zoom and Khan Academy. Digital learning platforms were generally perceived as effective in supporting mathematical problem-solving, with Looking Back receiving the highest rating and Understanding the Problem the lowest. Students and teachers shared similar perceptions only in Understanding the Problem, while significant differences were found in Devising a Plan, Carrying Out the Plan, and Looking Back. Among student profile variables, only age showed significant differences in selected stages, while the type of platform used had no significant relationship with perceived effectiveness. Internet connectivity, limited device access, unclear instructions, and insufficient technical support emerged as major barriers. The study implies that digital platforms are useful instructional supports when paired with scaffolded problem-solving activities, teacher feedback, learner reflection, and improved digital readiness through the proposed DIGI-MATH PAL Intervention Plan.

Keywords: Digital Learning Platforms, Mathematical Problem-Solving Competence, Grade 7 Learners, Mathematics Instruction, Perceived Effectiveness, DIGI-MATH PAL Intervention Plan

INTRODUCTION

This study investigated the perceived effectiveness of digital learning platforms in developing mathematical problem-solving competence of junior high school students. In the context of Sta. The Irene National High School, Agusan, Philippines, has integrated digital learning platforms in Mathematics instruction, particularly in delivering lessons, communication, submission of outputs, and learning support. However, the frequent use of these platforms does not imply that learners and teachers perceive them as effective in supporting the processes involved in mathematical problem solving. Therefore, this study aims to explore the perceptions of junior high school learners and Mathematics teachers on the role of digital learning platforms in supporting problem-solving processes.

Recent local and foreign research offers useful information regarding the application of digital learning platforms in education. Agaton and Cueto (2021) and Dangle and Sumaoang (2020) in the Philippines found that learners' experiences with digital learning are affected by internet connectivity, availability of devices, learners' preparedness, support from home, and readiness of educational institutions. Similarly, international studies by Almahasees et al. (2021), Drijvers and Sinclair (2024) and Lu and Xie (2024) demonstrate that digital platforms are likely to be perceived as beneficial when they facilitate students' engagement, interaction, self-regulated learning, and higher-order thinking.

While there is a growing body of literature on digital learning, there is a study vacuum in terms of how digital learning platforms are regarded as promoting certain stages of mathematical problem solving. Most of the previous research is about online learning in general, academic achievement, technology access, or implementation issues and less about how digital platforms are perceived to be effective for helping learners grasp the problem, make a strategy, execute the plan, and reflect. Recent international data from PISA 2022 (Organization for Economic Co-operation and Development [OECD], 2023) showed that only 16% of Filipino students achieved at least Level 2 proficiency in mathematics, highlighting the ongoing concern regarding learners' ability to use mathematical concepts in problem situations.

This study is significant because it offers localized and perception-based insights that can enhance the integration of digital learning platforms in mathematics education. It could indicate to learners the types of digital support they find beneficial for understanding problems, organizing strategies to solve them, executing procedures, and reflecting on mathematical answers. The findings may serve as a foundation for developing scaffolded digital activities, providing relevant teacher training, improving digital readiness, and addressing perceived barriers in technology-supported instruction for mathematics teachers and school administrators.

LITERATURE REVIEW

Demographic and contextual factors play a significant role in shaping how students experience and perceive digital learning platforms. In digital learning environments, learners do not participate under the same conditions because their access to devices, internet connectivity, home support, digital literacy, academic readiness, and socioeconomic background may vary considerably. Agaton and Cueto (2021) emphasized that Philippine learners' participation in distance learning was affected by household resources, parental support, and the availability of learning materials. This implies that students' perceptions of digital learning platforms may not only reflect the quality of the platform itself but also the learning conditions available to them at home and in school.

Similarly, foreign literature shows that learner readiness and digital literacy are essential conditions for meaningful participation in online or blended learning. Pokhrel and Chhetri (2021) argued that the shift to online learning during and after the pandemic required not only technological access but also learner preparedness, teacher support, and appropriate assessment practices. Baber (2021) likewise found that student characteristics, instructor characteristics, perceived usefulness, and perceived ease of use influence students' acceptance of e-learning systems. These findings suggest that digital learning becomes more effective when learners are not only provided with platforms but are also supported with the skills, motivation, and guidance needed to use them meaningfully.

Digital learning platforms have become important instructional tools because they support lesson delivery, communication, assessment, feedback, and independent learning. Haleem et al. (2022) explained that digital technologies help improve teaching and learning by widening access to instructional resources, supporting flexible learning, and strengthening interaction between teachers and learners. In Mathematics instruction, these functions are especially important because students often need repeated exposure to examples, guided practice, visual representations, and immediate clarification of procedures. Therefore, platforms used in Mathematics should not only serve as repositories of files but should also provide opportunities for engagement, practice, and feedback.

Moreover, foreign studies highlight the instructional value of interactive digital tools in Mathematics learning. Darmanova et al. (2025) reported that technologies such as GeoGebra, Desmos, Kahoot, and augmented reality tools are commonly used in middle and high school Mathematics to support engagement, visualization, and conceptual understanding. These tools are valuable because they allow learners to manipulate representations, observe patterns, test mathematical ideas, and participate actively in learning tasks. In this sense, digital platforms become more meaningful in Mathematics when they help students move from passive reception of lessons to active exploration of mathematical relationships.

In the Philippine setting, Barrot et al. (2021) emphasized that students' online learning experiences were influenced by access, interaction, communication, and the quality of the learning environment. Similarly, Madrilejos (2024) found that technology access and use, online teaching approaches, and motivation were among the predictors of Mathematics academic performance. These findings support the present study because they show that perceptions of effectiveness are shaped by both technological and pedagogical factors.

Recent literature suggests that educational technology can support problem-solving when it is intentionally integrated with appropriate instructional strategies. Lu and Xie (2024), in a systematic review, found that educational technologies help develop problem-solving skills when combined with support, guidance, training in tool use, course orientation, and peer collaboration. This means that technology alone does not automatically develop problem-solving competence; rather, its effectiveness depends on how the teacher designs tasks, guides learners, and encourages reflection. Therefore, in Mathematics instruction, digital platforms must be used not only to deliver content but also to scaffold students' thinking during problem-solving activities.

Furthermore, digital technologies may support Mathematics learning by helping students visualize problems, test strategies, interpret results, and validate answers. Cevikbas et al. (2023) reported that digital technologies can support mathematical modelling and problem solving by offering cognitive, social, instructional, and academic benefits, although they also noted challenges such as lack of competence and overreliance on technology. Similarly, Darmanova et al. (2025) found that interactive tools such as GeoGebra, Desmos, Kahoot, and augmented reality applications are used to support Mathematics engagement and understanding. These findings are relevant to the present study because they suggest that digital platforms may be perceived as effective when they help learners visualize abstract concepts, explore strategies, and reflect on their solutions.

PROPOSED METHODOLOGY

The research methodology employed in the conduct of the study. It provides a comprehensive discussion of the research design, research locale, research respondents, sampling procedure, research instrument, data gathering procedure, and statistical treatment of data

Research Design

This study employed a quantitative descriptive-survey research design. This design was deemed appropriate because the study aimed to describe, measure, and analyze the perceptions of junior high school learners and Mathematics teachers regarding the role of digital learning platforms in developing mathematical problem-solving competence. According to Creswell and Creswell (2022), quantitative research emphasizes the objective measurement of variables and the analysis of numerical data using statistical procedures. Survey research, in particular, is useful in obtaining numerical descriptions of the opinions, attitudes, perceptions, or characteristics of a population. Similarly, Saunders et al. (2023) explained that a survey design allows the researcher to collect standardized data from a defined group of respondents, making it suitable for describing trends, comparing groups, and examining relationships among variables.

Furthermore, the study includes comparative and correlational components within the quantitative descriptive-survey design. The comparative component is used to determine whether significant differences exist between the perceptions of students and teachers, as well as among respondents when grouped according to selected profile variables. Meanwhile, the correlational component is used to examine whether the digital learning platforms used are significantly related to their perceived effectiveness in developing mathematical problem-solving competence. These components are appropriate because they allow the researcher to determine differences and relationships among variables without making cause-and-effect claims.

Data Gathering Procedure

The data gathering procedure of this study was carefully and systematically conducted to ensure the accuracy, reliability, and ethical integrity of the research process. Prior to the actual collection of data, the researcher prepared the necessary research documents, including the validated questionnaires, permission letters, informed consent forms for parents or guardians, and assent forms for student respondents. The research instrument was first subjected to face and content validation by qualified experts and was further tested for reliability through pilot testing before it was administered to the actual respondents.

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The researcher secured the necessary permission to conduct the study from the appropriate school authorities. A formal letter of request, duly endorsed by the research adviser and the graduate school, was submitted to the Office of the School Principal of Sta. Irene National High School. Upon approval, the researcher coordinated with the Mathematics teachers, class advisers, and concerned personnel regarding the schedule, venue, and proper administration of the questionnaires. This coordination was done to ensure that the conduct of the study would not disrupt regular classes and school activities.

Before the administration of the questionnaires, the respondents were informed about the nature, purpose, and significance of the study. The researcher explained that their participation was voluntary and that they had the right to decline or withdraw from the study at any point without any negative consequence. For the student respondents, parental consent and student assent were secured prior to their participation. The teacher respondents were likewise informed about the purpose of the study and were asked to participate voluntarily.

During the actual data collection, the researcher personally administered the questionnaires to the Grade 7 learners and Mathematics teachers. Clear instructions were given to ensure that the respondents understood how to answer each part of the questionnaire. The researcher also addressed questions or clarifications raised by the respondents without influencing their answers. Sufficient time was provided for them to complete the instrument honestly and independently.

The accomplished questionnaires were collected immediately after completion to ensure a high retrieval rate and to prevent loss of data. The researcher then checked the returned questionnaires for completeness and consistency of responses. All gathered information was treated with strict confidentiality, and no names or identifying information were disclosed in the presentation and interpretation of results. The data were used solely for the purpose of this study.

After the retrieval of the questionnaires, the responses were organized, coded, and encoded in a spreadsheet or statistical software for analysis. The data were classified according to the research objectives and Statements of the Problem. Appropriate statistical tools were then applied to describe the respondents' profile, determine the digital learning platforms used, assess perceived effectiveness, examine significant differences and relationships, and identify challenges encountered in using digital learning platforms.

Finally, the results of the data analysis were interpreted in relation to the objectives of the study. The findings served as the basis for drawing conclusions, formulating recommendations, and developing the proposed intervention output intended to enhance the use of digital learning platforms in supporting mathematical problem-solving competence among junior high school learners. All relevant research documents, including permission letters, consent and assent forms, questionnaires, validation sheets, and reliability test results, are included in the Appendices of this manuscript.

Statistical Treatment

The statistical treatments were selected based on the nature of the data of this study.

Frequency Count. This was used to determine the number of respondents belonging to a particular category or response. It is a descriptive statistical tool that shows how often a specific characteristic, item, or response appears in the data.

Percentage. This was used to determine the proportion of respondents in each category in relation to the total number of respondents. It provides a clearer interpretation of the distribution of responses by expressing frequencies in relative terms.

Weighted mean. This was used to determine the average level of responses based on the assigned numerical weights of the Likert-scale options.

Independent samples t-test. This was used to determine whether there is a significant difference between the mean responses of two independent groups.

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One-way analysis of variance, or ANOVA. This was used to determine whether significant differences exist among the mean responses of three or more groups.

Pearson product-moment correlation coefficient Pearson r. This was used to determine the strength and direction of the relationship between two quantitative variables. This tool shows whether changes in one variable are associated with changes in another variable.

RESULTS AND DISCUSSIONS

Table 2.1 presents the distribution of the student respondents according to age, sex, elementary school graduated from, economic status, and academic performance. The profile of the respondents provides the necessary background for understanding the learning conditions, academic readiness, and possible digital learning experiences of the students involved in the study.

The demographic profile shows that the majority of respondents are 12–13 years old. This suggests a group of young adolescents who are still developing independent learning habits and digital readiness for problem solving in mathematics. The female population was slightly higher than the males, however this relatively balanced gender population distribution enables equal gender analysis with little bias. Since most of the participants were from public elementary schools, their experience of digital tools and technology-supported instruction was influenced by the resources and constraints of the public-school system.

Table 2.1. Profile of the Students

Profile	**Category**	**Frequency**	**Percentage**
Age	12-13	165	97%
	14-15	3	2%
	16-17	2	1%
Sex	Male	84	49%
	Female	86	51%
Elementary School Graduated	Public	131	77%
	Private	39	23%
Economic Status	Low Income	100	59%
	Middle Income	70	41%
Academic Performance	below 75	4	2%
	75-79	30	18%
	80-84	41	24%
	85-89	35	21%
	90-94	49	29%
	95-100	11	6%

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The highest number of respondents were in the low-income category suggesting challenges in access to internet, digital devices and resources for home learning which may impact on the use of digital platforms despite the perceived usefulness. Most students scored between 90 and 94 on the academic part. However, the presence of some low scoring students indicates that there is variation in problem solving ability. These findings support the literature that underscores the importance of learner readiness, socioeconomic factors, earlier school context and academic level in students' digital learning experiences and perceptions. The same factors have been studied by many researchers in digital learning environments and support these claims. Pokhrel and Chhetri (2021) also emphasized the importance of learner readiness in addition to technology access.

Table 2.2 presents the profile of the teacher respondents in terms of length of service and highest academic rank. The distribution provides a professional context for interpreting teachers' perceptions of digital learning platforms in supporting mathematical problem-solving instruction.

Table 2.2. Profile of the Teachers

Profile	**Category**	**Frequency**	**Percentage**
Length of Service	1-5 years	1	8%
	6-10 years	5	42%
	11-15 years	5	42%
	More than 20 years	1	8%
Highest Academic Rank	T-I	3	25%
	T-III	8	67%
	MT-I	1	8%

The profile of teacher respondents reveals that most were mid-career educators with 6–15 years of service, indicating substantial classroom experience and instructional maturity. This implies that these teachers have likely developed both traditional teaching competence and familiarity with technology-supported practices, making them well-positioned to evaluate digital learning platforms for mathematical problem-solving. Their length of service suggests sufficient exposure to curriculum implementation and student learning difficulties, meaning their perceptions are grounded in practical pedagogical experience rather than novice assumptions.

Regarding academic rank, the majority held the rank of Teacher III, a position beyond entry level that reflects professional development and increased instructional responsibility. This implies that the respondents were professionally mature and capable of assessing digital tools with pedagogical insight, though the limited number of Master Teacher respondents means the findings may better represent classroom teachers than instructional leaders. These demographic characteristics confirm that teacher readiness, professional experience, and competence are critical factors in effective technology integration, as perceptions gathered from mid-career, higher-ranked teachers provide a credible foundation for understanding how digital platforms can support Mathematics instruction.

Supporting these interpretations, Lu and Xie (2024) emphasized that educational technology requires guidance, scaffolding, and instructional design to develop problem-solving skills, while Cevikbas et al. (2023) noted that digital tools in Mathematics instruction face challenges when teachers lack competence or experience. Furthermore, the Philippine Department of Education (DepEd, 2022a) highlighted capacity building as essential for technology integration, reinforcing that teacher readiness and pedagogical competence—characteristics evident among the mid-career Teacher III respondents—fundamentally shape how digital learning platforms are perceived and utilized in developing students' mathematical problem-solving abilities.

Digital Learning Platforms Utilized in Mathematics Instruction

Table 3 presents the digital learning platforms utilized by teachers and students in Mathematics instruction. The results show that Google Classroom obtained the highest overall frequency, while Others obtained the lowest overall frequency. This indicates that Google Classroom was the most commonly utilized platform among the respondents, particularly among students. The result implies that Mathematics instruction in the study was largely supported by a platform that provides structure for posting lessons, distributing learning materials, assigning tasks, submitting outputs, and monitoring learning activities.

Table 3. Digital Learning Platforms Utilized in Mathematics Instruction

Digital Platforms	**Teacher**		**Students**		**Over-all Frequency**	**Over-all Percentage**
	Frequency	**Percentage**	**Frequency**	**Percentage**		
Google Classroom	1	8%	89	52%	90	49%
Zoom	5	42%	59	35%	64	35%
Khan Academy	5	42%	18	11%	23	13%
Others	1	8%	4	2%	5	3%
Total	12	100%	170	100%	182	100%

As for Google Classroom's popularity among teachers and students, it shows that digital learning platforms are usually appreciated for their ability to organize instructional tasks, structure resources, and facilitate communication. This indicates that, in the context of the study, technology integration in mathematics instruction is still mostly about accessibility and efficiency rather than subject-specific pedagogical enhancement. The high reliance on Zoom for synchronous interaction also suggests that teaching mathematics still needs the teacher to show things in real time, to walk through problem-solving step by step, and to provide real-time feedback, all of which cannot be fully provided through asynchronous platforms.

This indicates that effective mathematics teaching in a digital environment is a combination of the content structure and the teacher's live facilitation. Low use of Khan Academy and other tools such as ChatGTP and YouTube suggests that self-paced learning platforms and other digital resources are underutilized despite their capacity for practice exercises, visualization, and independent study. This indicates that teachers and students are more likely to use platforms for classroom management and direct instruction than for individual or exploratory learning. The scarce use of several digital tools, contrasts somewhat with the growing literature on interactive technologies in mathematics, indicating a discrepancy between the existing innovations and the actual classroom practice in this context.

The interpretations were supported by Haleem et al. (2022), who reported that digital technologies facilitated access to resources and enhanced teacher-learner interaction. Barrot et al. (2021) found that the significance of communication and ICT resources enhances online learning experiences. In a similar vein, Lu and Xie (2024) found that educational technology is especially effective to develop problem-solving skills with the aid of teachers' guidance, scaffolding, and facilitation. On the other hand, Darmanova et al. (2025) pointed out the use of digital tools like YouTube and Chatbots to promote engagement and enhance conceptual understanding. The results indicate the limited use of such tools. This suggests a gap between the literature on interactive technologies and their use in classrooms.

Perceived Effectiveness of Digital Learning Platforms in Supporting Mathematical Problem-Solving Skills

Table 4 presents the perceived effectiveness of digital learning platforms in supporting the development of mathematical problem-solving skills in terms of understanding the problem, devising a plan, carrying out the

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plan, and looking back. The overall result shows that digital learning platforms were perceived as Effective, indicating that both teachers and students generally viewed these platforms as useful in supporting the different stages of mathematical problem-solving.

Table 4. Perceived Effectiveness of the Digital Learning Platforms in Supporting the Development of Mathematical Problem-Solving Skill

Indicators	**Teachers**		**Students**		**Grand Mean**	**Over-all Adj Rating**
	Mean	**Adj Rating**	**Mean**	**Adj Rating**		
Understanding the problem	3.72	Effective	3.42	Effective	3.57	Effective
Devising a plan	3.88	Effective	3.38	Moderately Effective	3.63	Effective
Carrying out the plan	3.91	Effective	3.45	Effective	3.68	Effective
Looking back	3.88	Effective	3.49	Effective	3.69	Effective
Over-all Mean	**3.84**	**Effective**	**3.44**	**Effective**	**3.64**	**Effective**

Among the four problem-solving stages, Looking Back received the highest rating, indicating that digital learning platforms are perceived as most effective in helping learners review, evaluate, and reflect on their solutions after completing mathematical tasks. This implies that platforms successfully provide opportunities for revisiting materials, checking feedback, and assessing problem-solving processes. Conversely, Understanding the Problem received the lowest rating, suggesting that while still effective, this foundational stage may require stronger teacher guidance, clearer explanations, and more contextualized examples that digital platforms alone cannot sufficiently provide. When viewed by group, teachers rated Carrying Out the Plan highest, perceiving platforms as useful for executing solutions, while students rated Looking Back highest but gave Devising a Plan only a moderately effective rating. This reveals a critical gap: students struggle most with formulating strategies before solving, implying that platforms need more structured prompts, worked examples, and guided modeling to support planning skills.

The findings demonstrate that digital learning platforms are perceived as effective for mathematical problem-solving, but their effectiveness varies across stages, stronger for reflection and execution, weaker for comprehension and strategic planning. This implies that teachers should not rely solely on platform availability but must intentionally design digital activities that scaffold each stage of problem-solving, particularly understanding problems and devising plans. The value of educational technology, therefore, depends not merely on access but on how it is pedagogically integrated to support learners from initial comprehension through final reflection.

These interpretations are grounded in Pólya's problem-solving framework, while Lu and Xie (2024) and Cevikbas et al. (2023) emphasize that digital technologies require guidance, feedback, and reflection to support mathematical problem-solving effectively. Baber (2021) highlights that student acceptance of e-learning depends on perceived usefulness, ease of use, interaction, and instructor support, and Barrot et al. (2021) note that online learning experiences are shaped by communication, resources, and learning environment quality. Finally, Darmanova et al. (2025) affirm that digital tools become meaningful in Mathematics when they promote visualization, engagement, and active exploration, reinforcing that pedagogical integration, not mere access, determines the effectiveness of digital learning platforms across all problem-solving stages.

Significant Difference between Students' and Teachers' Perceptions of the Effectiveness of Digital Learning Platforms

Table 5 presents the test of significant difference between students' and teachers' perceptions regarding the effectiveness of digital learning platforms in supporting mathematical problem-solving skills. The results show that Understanding the Problem was the only indicator with a not significant result, while Devising a Plan, Carrying Out the Plan, and Looking Back showed significant differences. This means that students and teachers had similar perceptions only in the initial stage of problem-solving, particularly in understanding mathematical problems. However, their perceptions differed in the more complex stages that involve planning strategies, executing solutions, and reflecting on answers.

Table 5. Significant Difference Between Students and Teachers' Perceptions Regarding the Effectivenss of Digital Learning Platforms

Sources of Variation	**Computed t**	**p-value**	**Decision**	**Conclusion**
Understanding the problem	1.60	0.137	Failed to reject Ho	Not Significant
Devising a plan	3.44	0.004	Reject Ho	Significant
Carrying out the plan	2.92	0.012	Reject Ho	Significant
Looking back	2.45	0.028	Reject Ho	Significant

The non-significant result in Understanding the Problem implies that both students and teachers similarly perceived digital platforms as useful for basic comprehension, likely because platforms provide access to problem statements, examples, and posted lessons. However, the most pronounced significant differences were observed in Devising a Plan, Carrying Out the Plan, and Looking Back, indicating that teachers and students do not share the same perception regarding higher-order problem-solving stages.

Teachers may view platforms as effective because they can upload materials and monitor outputs, while students judge effectiveness based on actual guidance, clarity, and feedback received. The significant difference in Looking Back further suggests that teachers may perceive reflection as present through output submission and feedback, whereas students may not experience meaningful reflection unless explicitly guided to evaluate answers and improve strategies.

The findings imply that digital platforms already support basic comprehension effectively, but their effectiveness in planning, execution, and reflection remains inconsistent across groups. Teachers cannot assume that higher-order problem-solving processes occur automatically through platform use; instead, intentional scaffolding, explicit modeling, step-by-step guidance, and meaningful feedback must be designed into digital activities. The value of technology integration in Mathematics depends not merely on platform availability but on the quality of teacher facilitation, instructional design, and learner engagement throughout all problem-solving stages.

These interpretations affirm Haleem et al. (2022) on digital technologies widening access to resources, Baber (2021) on perceived usefulness influencing e-learning acceptance, and Lu and Xie (2024) on technology requiring guidance and scaffolding to develop problem-solving skills. They also conform to Cevikbas et al. (2023), who noted that challenges arise when learners lack competence or guidance, and to Darmanova et al. (2025), who emphasized that digital tools promote meaningful learning through active engagement and exploration. Within Pólya's framework, the significant differences in planning, execution, and reflection confirm that digital platforms must be accompanied by explicit teacher modeling, step-by-step scaffolds, and opportunities for guided reflection to be truly effective across all stages of mathematical problem-solving.

CONCLUSIONS

The study concludes that the respondents represent a learner group that is mostly composed of young Grade 7 students from public elementary school backgrounds and low-income households, while the teacher respondents are mostly experienced and professionally mature Mathematics teachers. This implies that digital learning integration in Mathematics must consider students' developmental readiness, economic conditions, prior learning exposure, and the instructional experience of teachers.

The study concludes that the use of digital learning platforms in Mathematics instruction is already present but remains concentrated on familiar and accessible platforms. Google Classroom emerged as the most commonly used platform, suggesting that practicality, accessibility, and familiarity strongly influence platform utilization in the local school context.

The study concludes that digital learning platforms are generally perceived as effective in supporting mathematical problem-solving skills. However, the students' lower rating in Devising a Plan indicates that learners still need stronger guidance in selecting strategies, organizing solution steps, and planning mathematical procedures before solving.

The study concludes that students and teachers share similar perceptions only in understanding mathematical problems, while their perceptions differ in planning, carrying out solutions, and reflecting on answers. This implies that teachers may perceive digital platforms as more supportive than students actually experience them in the higher stages of problem-solving.

The study concludes that age influences students' perceptions in the planning and execution stages of mathematical problem-solving, while other profile variables do not create meaningful differences. This implies that developmental readiness may be more influential than sex, academic performance, school background, or economic status in shaping how students perceive the usefulness of digital platforms for more complex problem-solving tasks.

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