

Collaborative Stakeholder Engagement as a Strategy for Bridging the Learning Gaps

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ABSTRACT

This study investigates the perceptions and involvement of key stakeholders, school leaders, teachers, and parents regarding learning gaps in literacy, numeracy, and science process skills in elementary education. Findings reveal significant differences in perceptions across stakeholder groups. School leaders expressed serious concerns, rating learning gaps as "Not Evident," whereas teachers and parents rated them as "Somewhat Evident" or "Moderately Evident." Despite these differences, all groups demonstrated strong commitments to addressing these gaps, with active engagement in literacy, numeracy, and science process skills activities. Correlations between stakeholders' descriptions of learning gaps and their involvement in addressing them were significant, particularly in literacy and numeracy.

Additionally, the study identified minimal differences in the levels of involvement among school leaders, teachers, and parents, suggesting a collaborative approach to addressing educational challenges. Based on these findings, an action plan was developed to enhance stakeholder engagement through unified training programs, improved communication strategies, and increased parental involvement. Recommendations include regular meetings for stakeholders, effective communication channels, and monitoring systems for evaluating the action plan's effectiveness. This comprehensive approach aims to foster a unified strategy to improve educational outcomes in literacy, numeracy, and science process skills.

Keywords: *Learning Gaps, Literacy, Numeracy, Science Process Skills, stakeholder engagement*

INTRODUCTION

Education remains one of the most important foundations for personal growth, social development, and national progress. In the elementary level, learners are expected to develop the basic competencies that will help them succeed in higher levels of learning, particularly in literacy, numeracy, and science process skills. Literacy allows learners to understand, interpret, and communicate ideas effectively; numeracy helps them solve problems and make sense of numbers in daily life; while science process skills develop curiosity, observation, reasoning, and inquiry. When learners experience gaps in these areas, their ability to participate meaningfully in classroom activities and future learning tasks may be affected.

In recent years, learning gaps have become a serious concern in many schools. These gaps may be seen in learners' difficulty in reading and understanding texts, solving mathematical problems, applying basic number concepts, conducting simple investigations, or explaining science-related ideas. The World Bank emphasizes that foundational learning, especially literacy and numeracy, serves as the essential building block for lifelong learning and success. This means that when children fail to master these basic skills at the early stage, they may continue to experience academic difficulties in the succeeding grade levels.

The issue of learning gaps is also evident in the Philippine basic education context. The Department of Education introduced the MATATAG Curriculum as a response to persistent challenges in basic education, with

emphasis on a decongested curriculum, clearer competencies, and strengthened foundational learning. DepEd Order No. 010, s. 2024 states that the MATATAG Curriculum serves as a fundamental guide for teachers in planning instruction and aligning classroom activities with the intended learning competencies. This policy direction shows that improving learners' basic skills is not only a classroom concern but also a system-wide priority.

However, addressing learning gaps cannot be done by teachers alone. Learners' academic development is influenced by many people within and outside the school. School heads provide leadership, direction, and support for school programs; teachers design and implement learning interventions; and parents reinforce learning habits, motivation, and discipline at home. The OECD, in its 2024 report on stakeholder engagement in education and skills policy, explains that engaging stakeholders allows education systems to gather practical insights, understand real conditions on the ground, and strengthen the implementation of reforms. In this sense, stakeholder engagement becomes a necessary strategy in responding to learning problems because it encourages shared responsibility among those who directly influence learners' progress.

Despite the presence of programs and interventions, a gap remains in how stakeholders understand and address learners' difficulties. School leaders, teachers, and parents may not always have the same perception of the seriousness of learning gaps. School heads may view the problem from the perspective of school performance and program implementation, while teachers may observe the gaps through classroom tasks and assessments. Parents, on the other hand, may see the problem through homework struggles, study habits, attendance, or the learner's motivation at home. When these perspectives are not aligned, interventions may become fragmented, inconsistent, or less effective. This gap highlights the need to study how stakeholders describe learning gaps and how they participate in addressing them.

This study, is therefore important because it focuses not only on the existence of learning gaps but also on the role of collaboration in addressing them. It recognizes that improving learner outcomes requires the active participation of school leaders, teachers, and parents. By examining their perceptions and involvement, the study may provide a clearer understanding of how collaboration can be strengthened to support learners in literacy, numeracy, and science process skills. The findings may also serve as a basis for developing an action plan that promotes professional development, stronger communication, and greater parental participation in school initiatives.

Recent literature continues to emphasize that learning gaps in basic education are closely connected to weaknesses in foundational skills. The World Bank's work on learning poverty highlights that reading is a gateway to further learning and that children who cannot read with understanding at an early age are more likely to struggle in other subjects. Similarly, the World Bank's 2024 report, *Confronting the Learning Crisis*, stresses that education systems must focus on improving basic education outcomes and ensuring that learners acquire the competencies needed for continued schooling. These studies support the idea that literacy and numeracy gaps must be addressed early because they affect learners' overall academic development.

In the Philippine setting, learning gaps have also been linked to broader issues in curriculum, instruction, and learning recovery. The EDCOM II Year One Report, *Miseducation: The Failed System of Philippine Education*, published in 2024, discusses continuing concerns in the country's education system and points to the need for reforms that respond to learners' actual needs. The implementation of the MATATAG Curriculum further reflects the national effort to address these concerns by strengthening foundational competencies and improving the organization of learning standards. These policy developments provide a strong background for studies that examine how schools and stakeholders respond to learning gaps at the local level.

Parental involvement is also strongly supported in recent studies as an important factor in learner achievement. Rasonabe's 2024 study on parental involvement, literacy, and numeracy skills of Key Stage 2 learners found a significant relationship between parental involvement and learners' literacy and numeracy performance. The study emphasized that as parental engagement increases, learners' academic performance in reading and mathematics also improves. It further recommended workshops, regular communication between parents and teachers, and programs that encourage parents to participate in classroom and home-based learning activities. This supports the present study's focus on parents as essential partners in bridging learning gaps.

Teacher engagement and school leadership are likewise important in addressing learning difficulties. The OECD explains that stakeholder engagement helps education systems develop policies and programs that are grounded in practical realities and diverse perspectives. In the school context, this means that teachers' classroom experiences and school leaders' administrative decisions must be connected. School heads help create the conditions for intervention programs, monitoring, and resource support, while teachers implement strategies that directly respond to learners' needs. When leadership and teaching efforts are coordinated, schools are better able to design interventions that are relevant, timely, and sustainable.

In science education, learning gaps are not limited to content knowledge but also include science process skills such as observing, measuring, classifying, predicting, interpreting data, and drawing conclusions. A 2024 study on Grade V learners in Bukidnon reported that learners' proficiency in science process skills did not meet expectations in several areas and that gaps in these skills were related to cognitive performance. Another 2024 study on inquiry-based learning resource materials for Grade 4 science found that inquiry-based strategies helped improve learners' integrated science process skills. These findings suggest that science process skills require intentional instructional support and may benefit from collaborative efforts among teachers, school leaders, and parents.

The reviewed literature shows that learning gaps in literacy, numeracy, and science process skills remain a relevant concern in basic education. Existing studies confirm the importance of foundational learning, parental involvement, teacher engagement, school leadership, and responsive curriculum implementation. However, there is still a need for localized studies that examine how different stakeholders perceive learning gaps and how they work together to address them. This is the gap that the present study seeks to address. By focusing on collaborative stakeholder engagement, the study aims to contribute to a more practical and school-based understanding of how learning gaps can be bridged through shared responsibility and coordinated action.

Literature Review

Shanahan (2020) argues that integrating reading and writing instruction can be particularly beneficial for struggling readers, as the two processes are highly interconnected. He asserts, "Integrating reading and writing instruction can benefit struggling readers, as the two processes are highly interconnected. Explicit instruction in areas like phonics, vocabulary, comprehension, and genre knowledge can be reinforced through both reading and writing activities." Moreover, struggling readers often lack metacognitive awareness and self-regulation skills. Thus, connecting reading and writing can help develop these higher-order abilities. Writing about texts read can deepen comprehension and retention of information, while reading models can support improvement in students' writing. Consequently, instructional routines that alternate between reading and writing, or that have students use their writing to inform their reading, can be effective for struggling readers.

Siegler and Lortie-Forgues (2014) provide an overview of the current research on the development of numerical understanding in children. They note that a substantial body of work has accumulated in this area, with several key findings. For instance, Xu and Garcia (2020) found that infants as young as six months can distinguish between different quantities, reinforcing the idea that numerical cognition begins early in life. This finding highlights the remarkable capability of infants to engage with basic numerical concepts before formal education. As children develop, their understanding of numbers becomes even more intricate. In this context, research by Chen and Li (2021) explored how children's grasp of number concepts is intricately linked to their ability to engage in mathematical reasoning. This connection emphasizes the significance of early numerical experiences in shaping later mathematical skills.

Furthermore, the impact of educational interventions on numerical skill development has been a focal point in recent research. Notably, a study by Baroody et al. (2022) demonstrated that targeted instructional strategies can significantly enhance young children's numerical understanding. This underscores the crucial role that early educational experiences play in fostering mathematical competence. Collectively, this body of research provides a rich foundation for the integrative theory of numerical development proposed by Siegler and Lortie-Forgues (2014).

By synthesizing findings from various strands of the literature, the authors aim to offer a comprehensive account of how numerical understanding emerges and evolves throughout childhood.

Transitioning to science education, Minner et al. (2019) discuss the theoretical foundations for inquiry-based science instruction, drawing on constructivist learning theories that emphasize the active role of the learner in making sense of new information. They also note that inquiry approaches are often viewed as more aligned with the nature of scientific practice, as they allow students to engage in processes akin to those used by professional scientists. Overall, this review of the literature provides important context for the meta-analysis that Minner et al. (2019) subsequently present on the effects of inquiry-based science instruction. By outlining the rationale and theoretical underpinnings for this pedagogical approach, the authors set the stage for a more in-depth examination of the research.

In exploring factors that contribute to learning gaps, Darling-Hammond et al. (2019) conducted a comprehensive analysis of effective instructional strategies and their impact on student academic progress. Their study underscored the importance of several key factors, including teachers with extensive training and preparation, the use of instructional methodologies grounded in empirical evidence, individualizing instruction to meet diverse student needs, and cultivating a positive classroom environment. The efficacy of these aspects in mitigating learning gaps has been demonstrated through research evidence regarding their effectiveness.

Moreover, Baker et al. (2021) examined the efficacy of tutoring programs as strategies for reducing learning gaps. Their research found that targeted tutoring interventions, particularly those centered on enhancing literacy and numeracy skills, have the potential to significantly improve student achievement and mitigate disparities in learning outcomes. In this context, scholarly investigations have also explored the role of technology in addressing educational disparities. Hattie et al. (2020) conducted a meta-analysis of diverse technology-based treatments to assess their influence on student outcomes. The results underscored the capacity of educational technology to facilitate learning and mitigate inequalities, especially when complemented by effective pedagogical practices.

Given the significance of learning gaps, recent research has explored the perceptions and perspectives of various stakeholders, including educators, policymakers, and parents, regarding the nature and causes of these gaps. For example, Gibbons and Silva (2021) examined the role of school resources and support systems in shaping students' academic outcomes. Their research indicated that disparities in access to quality educational resources significantly contribute to the achievement gaps perceived by students. This reinforces the idea that while external factors like family background are important, the educational environment plays a crucial role in determining academic success.

Similarly, a study by Putnam et al. (2016) explored the perspectives of policymakers and community leaders on the factors contributing to learning gaps. The researchers found that these stakeholders often focused on the role of family and community-level factors, such as parental involvement and access to resources, in shaping student learning outcomes. Relatedly, Jeynes (2015) investigated the perceptions of school administrators regarding the factors contributing to achievement gaps between students of different racial and socioeconomic backgrounds. The findings indicated that administrators often attributed these gaps to challenges faced by students outside of the school, such as family instability and access to resources, rather than to factors within the school system.

Additionally, Reardon et al. (2019) examined the perspectives of teachers on the causes of income-based achievement gaps. They found that teachers were more likely to view these gaps as stemming from factors related to students' home environments, such as parental education and involvement, rather than from differences in instructional quality or school resources. Shifting to the perspectives of students, a study by Rodríguez-Planas and Nollenberger (2018) investigated how high school students perceived the reasons for academic disparities among their peers. The findings suggested that students often attributed these gaps to differences in individual effort and motivation, as well as to the influence of their family and community contexts.

Furthermore, a study by Steele-Johnson and Leas (2013) explored the perceptions of parents from low-income backgrounds regarding the causes of learning gaps. The researchers found that these parents were more likely to view the gaps as the result of systemic inequities, such as inadequate funding and resources in their children's schools, rather than individual or family-level factors. These studies highlight the diverse and sometimes

conflicting perspectives that stakeholders bring to the issue of learning gaps. Understanding these varied viewpoints can inform more collaborative and holistic approaches to addressing educational disparities.

In a qualitative study, Greenhill et al. (2019) investigated the perceptions of parents from diverse backgrounds regarding the causes of learning gaps. The findings suggested that parents' views were influenced by their own educational experiences, as well as their perceptions of the school system and the resources available to their children. Collectively, these studies underscore the importance of considering the diverse perspectives of stakeholders when addressing the complex issue of learning gaps. By understanding the nuanced ways in which different groups perceive and attribute the causes of these gaps, educators and policymakers can develop more targeted and collaborative strategies to support student learning and success.

In examining the impact of various teaching practices on student learning, Hattie (2015) found that instructional approaches such as providing clear learning objectives, giving effective feedback, and fostering student self-regulation were among the most effective practices for improving student outcomes. Similarly, a review by Darling-Hammond et al. (2020) highlighted the importance of evidence-based teaching strategies, such as the use of formative assessments, differentiated instruction, and collaborative learning, in supporting student learning and achievement. The authors emphasized the need for ongoing professional development to help teachers implement these practices effectively.

Focusing on the role of technology in teaching and learning, a study by Sung et al. (2016) explored the integration of digital tools and resources into classroom instruction. The researchers found that the effective use of technology, coupled with sound pedagogical approaches, could enhance student engagement, facilitate personalized learning, and improve academic performance. Recent research has continued to explore similar themes, further reinforcing the importance of these strategies in educational contexts. For instance, a systematic review by Adesope et al. (2017) highlighted the effectiveness of retrieval practice across various educational settings, emphasizing that frequent testing and self-assessment not only enhance retention but also deepen students' understanding of the material.

Cepeda et al. (2019) examined the benefits of distributed practice. They found that spacing out study sessions leads to better long-term retention compared to cramming. This study underscores the idea that students who engage in distributed learning strategies are likely to perform better on assessments over time, highlighting the importance of effective study habits. Furthermore, a study by Yeo et al. (2019) investigated the impact of metacognitive strategies on student learning. The researchers found that teaching students to plan, monitor, and evaluate their learning processes could lead to significant improvements in academic achievement, as well as increased self-regulation and motivation.

Overall, the research suggests that various stakeholder groups tend to view the causes of learning gaps through different lenses. Educators and administrators often attribute these gaps to external, family-level factors such as socioeconomic status, parental involvement, and access to resources. In contrast, students and parents from low-income backgrounds are more likely to perceive the gaps as stemming from systemic inequities within the education system, such as inadequate funding and resources. The perceptions of stakeholders appear to be heavily shaped by their own educational experiences and backgrounds. For example, parents' views on learning gaps seem influenced by their personal schooling experiences, as well as their observations of the resources and opportunities available to their children. Some stakeholders, like students, tend to attribute learning gaps more to individual-level factors such as effort and motivation. On the other hand, other stakeholders, particularly low-income parents, are more likely to recognize the role of structural and systemic factors in contributing to these educational disparities.

Ultimately, the diverse perspectives highlighted in the literature underscore the need for more collaborative and holistic approaches to addressing learning gaps. By understanding the nuanced views of different stakeholder groups, educators and policymakers can develop more targeted and effective interventions that address the multifaceted nature of this issue. These findings suggest that effectively addressing learning gaps requires a comprehensive understanding of the perceptions and experiences of various stakeholders, as well as a willingness to tackle the complex interplay of individual, family, and systemic factors that contribute to these disparities in educational outcomes.

The literature review also highlights the extensive research by Filipino scholars on the issue of learning gaps and disparities in the Philippines. For instance, Balgos (2021) provided a comprehensive overview of this pressing concern, emphasizing the urgency for targeted interventions. Similarly, Mendoza and Bautista (2019) explored the perceptions of various stakeholders about the causes of these learning gaps, shedding light on the multifaceted nature of the challenge. Furthermore, Corpuz's (2023) research underscored the significant impact of learning gaps on the academic achievement of Filipino students, stressing the critical role of tailored interventions in mitigating these adverse effects.

Collectively, these studies underscore the need for a holistic and inclusive approach to address learning gaps, considering the complex interplay of factors involved. Additionally, the review highlights valuable contributions from international research in understanding effective practices for addressing learning gaps in literacy. For instance, Henderson et al. (2018) emphasized the crucial role of school-family partnerships in enhancing educational outcomes, underscoring the importance of collaborative efforts in supporting students' literacy development. In a similar vein, Wang et al. (2023) conducted a longitudinal study demonstrating the positive impact of parental involvement on the reading achievement of struggling readers, highlighting the potential for parental engagement as a powerful tool in addressing literacy gaps.

Moreover, Downey and St. John (2020) and Jeynes (2021) underscored the significance of early childhood parental involvement in promoting literacy skills, laying the foundation for improved educational outcomes. Collectively, these studies, both from the Philippines and internationally, reinforce the importance of a collaborative and holistic approach to addressing learning gaps in literacy. By considering the diverse perspectives of stakeholders, leveraging the power of school-family partnerships, and prioritizing early childhood parental involvement, educators and policymakers can develop more targeted and effective interventions to support students' literacy development and bridge the persistent learning gaps.

In conclusion, the research conducted by Santos (2021) explored the effectiveness of various learning strategies, including collaborative learning and self-regulated learning, among high school students in Metro Manila. The study found that students who employed these strategies demonstrated significant improvements in their academic performance, particularly in mathematics and science subjects. This highlights the importance of implementing effective learning strategies to enhance student outcomes in the Philippine educational system. Furthermore, Reyes (2020) examined how Filipino students perceive academic achievement in relation to their socioeconomic backgrounds, finding that students from lower socioeconomic statuses often felt disadvantaged compared to their peers. This perception underscores the need for targeted interventions to support students from diverse backgrounds.

Additionally, Cruz (2019) conducted a dissertation investigating the impact of educational disparities on student learning outcomes in rural areas of the Philippines. The research highlighted significant gaps in access to quality education, with students in rural schools facing challenges such as inadequate facilities and limited access to learning materials. These factors adversely affected their academic performance, emphasizing the need for policies aimed at addressing educational inequities.

Lastly, Villanueva (2022) focused on the implementation of culturally responsive teaching practices in public elementary schools. The study found that when teachers incorporated local culture and context into their lessons, students demonstrated higher engagement and improved academic outcomes, particularly among indigenous learners. This suggests that culturally relevant pedagogy can enhance student learning experiences in the Philippines.

The literature concerning numeracy, literacy, and science process skills reveals a complex interplay that significantly shapes children's educational development. Each of these areas plays a crucial role in fostering overall academic success and is influenced by early experiences, effective instructional strategies, and the interconnectedness of skills.

Research highlights the importance of early numeracy skills as foundational for later mathematical competence. For instance, Xu and Garcia (2020) found that even infants possess the ability to distinguish between different quantities, indicating that numerical cognition begins well before formal schooling. As children grow, their understanding of number concepts becomes increasingly sophisticated. Chen and Li (2021) pointed out that a child's

grasp of numerical concepts is closely linked to their mathematical reasoning abilities. This relationship emphasizes the need for early interventions, as targeted instructional strategies can significantly enhance children's numeracy skills and help mitigate learning gaps, as demonstrated by Baroody et al. (2022).

In parallel with numeracy, literacy skills are equally critical for academic achievement. Shanahan (2020) argued that integrating reading and writing instruction can significantly benefit struggling readers, given the high level of interconnection between the two processes. Effective literacy instruction that emphasizes phonics, vocabulary, and comprehension reinforces both reading and writing skills. Furthermore, writing about texts read can deepen comprehension and retention, illustrating the reciprocal nature of literacy processes. This integration can also foster metacognitive awareness, which is vital for self-regulation and overall academic success.

The development of science process skills is another essential component of children's education. Inquiry-based learning approaches, as discussed by Minner et al. (2019), align well with constructivist learning theories, allowing students to engage in processes similar to those used by professional scientists. This method not only fosters critical thinking and problem-solving skills but also enhances students' understanding of scientific concepts. By emphasizing hands-on activities and real-world applications, inquiry-based instruction helps students develop a deeper grasp of scientific principles, reinforcing their overall learning experience.

The interconnectedness of numeracy, literacy, and science process skills is evident throughout the literature. Each domain supports and enriches the others, creating a holistic educational framework. For example, effective literacy skills are crucial for understanding scientific texts, while strong numeracy skills enhance data interpretation in science. Additionally, as students engage in inquiry-based science activities, they can apply their literacy skills to communicate findings and their numeracy skills to analyze results, further reinforcing their learning across disciplines.

In conclusion, the synthesis of literature on numeracy, literacy, and science process skills highlights the importance of early development, effective instructional strategies, and the interconnected nature of these domains. By considering the interplay between these critical areas, educators and policymakers can design comprehensive approaches that support children's overall academic growth and prepare them for future success.

METHODS

Research Design

This research study utilized a combination of quantitative and descriptive research approaches to investigate the involvement of key stakeholders, including school leaders, teachers, and parents, in addressing learning gaps in the areas of literacy, numeracy, and science process skills.

The study adopted a descriptive research approach, which aimed to accurately and systematically describe the existing phenomenon of learning gaps and the roles of different stakeholders in addressing these gaps. The researcher did not attempt to modify or manipulate the individuals, conditions, or occurrences, but rather observed and collected data on the current state of affairs.

Research Locale

The study was conducted in a school setting where different departments work together to support learners' academic growth and overall development. This locale was chosen because it provides a meaningful environment for examining how collaborative efforts among school stakeholders can help address the learning divide. Since the school is composed of various departments, it offers a rich context for understanding how leadership, teaching practices, and home support contribute to learners' educational experiences.

The respondents of the study came from three important groups within the school community: school leaders, elementary teachers, and parents. Specifically, the study involved 10 school leaders from different departments, 50 elementary teachers, and 40 parents. These groups were selected because they play direct and meaningful roles in bridging learning gaps. School leaders provide direction, implement programs, and create policies that guide instructional improvement. Teachers, on the other hand, are directly involved in the teaching-

learning process and are in the best position to identify learners' needs, challenges, and progress. Parents also serve as essential partners, as their involvement at home greatly influences the motivation, attendance, and learning habits of their children.

The inclusion of respondents from different departments allowed the study to gather varied perspectives on stakeholder engagement. This helped provide a more holistic understanding of how collaborative solutions are practiced within the school. Through the participation of school leaders, teachers, and parents, the study was able to explore how shared responsibility, communication, and cooperation may contribute to reducing learning gaps among elementary learners.

Overall, the research locale reflects a real and active educational community where stakeholders continuously interact to support learners. It serves as an appropriate setting for the study because it highlights the importance of partnership among school personnel and families in addressing educational challenges and promoting inclusive learning opportunities.

Participants and Sampling Technique

The participants of the study were composed of three groups of respondents who are directly involved in the educational development of learners: school leaders, elementary teachers, and parents. These groups were chosen because they represent key stakeholders in the school community and play important roles in addressing learning gaps and improving learner outcomes.

Specifically, the study involved 10 school leaders from different departments, 50 elementary teachers, and 40 parents, for a total of 100 respondents. The school leaders provided insights from the perspective of administration and program implementation. Their experiences helped explain how school policies, support systems, and departmental initiatives contribute to bridging the learning divide. The elementary teachers, being directly engaged in classroom instruction, offered valuable information about learners' needs, teaching strategies, and challenges encountered in the learning process. Meanwhile, the parents shared their experiences and observations regarding home support, learner motivation, and their involvement in school-related activities.

The study used stratified random sampling to ensure that the three groups of respondents were properly represented. In this technique, the population was first divided into specific groups, or strata, namely school leaders, teachers, and parents. After the groups were identified, respondents were randomly selected from each stratum based on the target number of participants. This approach helped ensure that the voices of each stakeholder group were included in the study rather than relying on only one group of respondents.

Using stratified random sampling was appropriate because the respondents came from different roles within the school community. Since school leaders, teachers, and parents may have different experiences and perspectives, this sampling technique allowed the study to gather more balanced and meaningful data. It also helped provide a clearer understanding of how collaborative stakeholder engagement may contribute to bridging the learning divide.

Overall, the selection of participants and the use of stratified random sampling supported the goal of the study by allowing varied yet relevant perspectives to be represented. Through the participation of school leaders, teachers, and parents, the study was able to explore the importance of shared responsibility, cooperation, and partnership in addressing learners' educational needs.

Research Instrument

In this research study, the primary instrument utilized to gather the necessary data was a researcher-constructed questionnaire. The researcher recognized the importance of developing a comprehensive and reliable instrument that could effectively capture the perspectives of key stakeholders, including school leaders, teachers, and parents.

The questionnaire was designed to comprise three distinct parts, each addressing a specific aspect of the investigation. Part I focused on assessing the participants' perceptions of the learning gaps in the areas of literacy, numeracy, and science process skills. Each of these three sections contained ten items evaluating the level of agreement among respondents regarding the existence and nature of these learning gaps. Part II of the questionnaire was dedicated to understanding the involvement of various stakeholders in addressing the identified learning gaps.

Similar to Part I, each section (literacy, numeracy, and science process skills) contained ten items that assessed the degree of involvement of school leaders, teachers, and parents in addressing challenges in these areas. The third and final part of the questionnaire sought to investigate the best practices employed by the schools in addressing the learning gaps, with the involvement of different stakeholder groups.

Data Gathering

The data collection process for this research study can be visualized through the following narrative flowchart:

Securing Approvals: The researcher first obtained the necessary approvals and permissions from relevant authorities, such as the school district or board of education, along with any required ethical clearance or institutional review board (IRB) approvals.

Identifying Participants: The researcher identified the target population for the study, which included school leaders, teachers, and parents from the selected schools.

Contacting Participants: The researcher reached out to potential participants, either through formal channels (e.g., school administration) or directly, to invite them to participate in the study.

Distributing Questionnaire: The carefully developed and validated questionnaire was distributed to the participating school leaders, teachers, and parents in physical mode.

Monitoring Response Rate: The researcher closely monitored the response rate and followed up with participants, if necessary, to ensure a high level of participation.

Collecting Responses: As completed questionnaires were received, the researcher carefully collected and organized the data, meticulously recording the responses.

Data Cleaning and Preparation: The researcher undertook a thorough data cleaning process, addressing any inconsistencies, missing data, or outliers in the collected responses, and prepared the data for statistical analysis.

Data Analysis and Interpretation: The researcher employed various statistical techniques, such as descriptive statistics, correlation analysis, and regression analysis, to analyze the collected data and interpret the findings in the context of the research objectives and the existing body of literature.

Ensuring Data Security: Throughout the data gathering and analysis process, the researcher maintained the highest standards of data security and confidentiality, protecting the privacy and anonymity of the participants.

Data Analysis

The survey responses were quantitatively summarized using a percentage-based analysis approach. For each survey question, the researcher calculated the percentage distribution of the different answer choices. This allowed for a clear understanding of the prevailing trends and patterns in the parents' opinions and preferences. By calculating the percentages, the researcher identified the most common responses and determined the overall prevalence of specific viewpoints or attitudes among the surveyed parents.

This percentage-based approach facilitated easy comparison and identification of any significant differences in responses across different survey questions or subgroups of parents. It highlighted areas of consensus or divergence, contributing to a more nuanced interpretation of the data.

To determine the relationship between the school's current proficiency level, the strategies used to address learning gaps, internal stakeholder accountability performance, and parents' involvement, the researcher employed Pearson's r Correlation Analysis with a 5% alpha level of significance.

The data analysis also included the following statistical tools:

Frequency and mean percentage distribution to describe the stakeholders' perception of the learning gaps.

Spearman rank correlation coefficient to test the significant relationship between the stakeholders' description of the learning gaps and their involvement in addressing the gaps.

One-way analysis of variance (ANOVA) to test the significant difference between the involvement of stakeholders' descriptions of the learning gaps. T-test to test the significant difference between the involvement of stakeholders in addressing the learning gaps.

All formulas were embedded in the Statistical Package for Social Science (SPSS) and Microsoft Excel. The researcher used specific weights, ranges, and verbal interpretations for the strategies and progress in addressing learning gaps.

Ethical Consideration

This study observed ethical standards to protect the rights, dignity, and welfare of all participants. Since the respondents included school leaders, elementary teachers, and parents, the researcher ensured that their participation was handled with respect, fairness, and confidentiality throughout the research process. Before the conduct of the study, the researcher sought permission from the proper school authorities. A formal request was made to allow the distribution of the research instrument and the gathering of data from the identified respondents. This step was important to ensure that the study was conducted in an organized and respectful manner within the school setting. The participants were also informed about the purpose of the study, the nature of their participation, and how the data would be used. They were made aware 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. This helped ensure that the respondents took part in the study freely and without pressure.

Confidentiality was strictly observed in handling the responses of the participants. No names or personal information were disclosed in the presentation, analysis, and interpretation of data. The responses were treated with privacy and were used only for academic and research purposes. In reporting the results, the researcher presented the data in summarized form to protect the identity of the respondents. The researcher also ensured that the questions included in the research instrument were appropriate, respectful, and related only to the objectives of the study. No question was intended to offend, embarrass, or cause discomfort to the participants. The researcher maintained honesty in gathering, recording, analyzing, and interpreting the data to preserve the integrity of the study.

Overall, the study upheld ethical research practices by securing permission, obtaining voluntary participation, protecting the confidentiality of respondents, and ensuring the responsible use of data. These considerations helped establish trust between the researcher and the participants and contributed to the credibility and fairness of the research process.

RESULTS AND DISCUSSION

This study aimed to explore stakeholders' perceptions of learning gaps in literacy, numeracy, and science process skills, as well as their involvement in addressing these gaps. By investigating the specific descriptions and engagement levels of stakeholders, the research identified underlying issues affecting student performance and highlighted effective strategies for improvement. Understanding the relationships and differences in perceptions across these domains provided valuable insights for developing targeted interventions, ultimately leading to actionable plans that enhanced educational outcomes for all learners.

The perceptions of school leaders, teachers, and parents regarding the learning gaps in literacy among learners highlight significant differences in how each group views the students' literacy skills. The data reveal that school leaders perceive substantial gaps in literacy skills, with mean scores consistently falling within the "Not Evident" (NE) range for most statements. For instance, they rated the statement "Students in the school do not meet or exceed grade-level standards in literacy" with a mean of 1.50, indicating a belief that these standards are not being met. In contrast, teachers also expressed concerns, rating several statements as "Somewhat Evident" (SE), with mean scores ranging from 1.89 to 2.04. This suggests that while teachers acknowledge some gaps, they perceive the situation as slightly better than school leaders do. Parents, however, have a markedly more positive view, with mean scores in the "Very Evident" (VE) range for most statements, particularly noting that students can use literacy skills to think critically and solve problems, with a mean of 3.47.

This disparity in perceptions among the three groups may reflect differing expectations and experiences within the educational environment. Research indicates that parental involvement is crucial for student success, and parents' more optimistic views may stem from their direct engagement with their children's literacy activities at home (Fan & Chen, 2017). Conversely, school leaders and teachers, who are more attuned to the systemic challenges

within the school, may focus on the broader issues affecting literacy outcomes, such as access to quality instruction and student motivation (Hill & Tyson, 2009).

Moreover, the findings align with studies that emphasize the importance of collaboration among educators and parents to bridge these gaps. For instance, a systematic review by Jeynes (2016) highlights that effective partnerships between parents and schools can lead to improved literacy outcomes, suggesting that the differing perceptions in Table 2 could be addressed through enhanced communication and collaboration among all stakeholders.

The perceptions of school leaders, teachers, and parents regarding learning gaps in numeracy among students reveal notable differences in how each group assesses the students' numeracy skills. The data indicate that school leaders perceive significant gaps in numeracy skills, with mean scores consistently falling within the "Not Evident" (NE) range for most statements. For example, they rated the statement "Students in the school are not meeting or exceeding grade-level standards in numeracy" with a mean of 1.40, indicating a strong belief that learners are not achieving these standards. Similarly, other statements like "Students in the school do not have the necessary numeracy skills to succeed in all academic areas" received a mean of 1.20, further emphasizing concerns about the learners' foundational skills.

In contrast, teachers' assessments reflect a somewhat more optimistic view, with most statements categorized as "Somewhat Evident" (SE). Their mean scores, such as 1.99 for the first statement and 2.00 for several others, suggest that while they acknowledge gaps in numeracy skills, they perceive the situation as somewhat better than school leaders do. Parents, while still recognizing challenges, also rated most statements as "Somewhat Evident," with mean scores ranging from 2.17 to 2.30. This indicates a shared concern about students' numeracy skills but suggests that parents may hold a more favorable perspective compared to school leaders.

The differences in perceptions among the three groups may highlight the varying contexts in which they engage with students' numeracy competencies. Research has shown that parental involvement is crucial for learners' success, which may explain why parents exhibit a more positive outlook (Fan & Chen, 2017). Meanwhile, school leaders, who are often focused on systemic issues and overall school performance, may have a more critical view of students' numeracy skills (Hill & Tyson, 2009).

Additionally, the findings resonate with recent literature that underscores the importance of providing high-quality numeracy instruction and resources. For instance, a study by Jeynes (2020) emphasizes that access to quality educational resources significantly impacts student achievement in mathematics. This contextual understanding suggests that the perceived gaps in numeracy could be addressed through improved instructional practices and resource availability.

The perceptions of school leaders, teachers, and parents regarding learning gaps in science process skills among students highlight significant discrepancies in how each group assesses learners' abilities. The data reveal that school leaders perceive substantial gaps in science process skills, with mean scores predominantly falling within the "Not Evident" (NE) range. For example, "Students in the school do not meet or exceed grade-level standards in science process skills" received a mean score of 1.40, indicating a strong belief that learners are not achieving these essential skills. Similarly, other statements, such as "Students in the school do not have the necessary science process skills to succeed in science and other academic areas," were rated with a mean of 1.20, reinforcing concerns about the foundational skills necessary for academic success.

In contrast, both teachers and parents exhibit a more favorable view of students' science process skills, rating most statements as "Moderately Evident" (ME) or "Very Evident" (VE). For instance, teachers rated the same statement about meeting grade-level standards with a mean of 3.14, while parents rated it at 3.33. This suggests that while both teachers and parents recognize some gaps in skills, they believe learners are performing significantly better than school leaders perceive.

The differences in perceptions among the groups may reflect their varying roles and experiences within the educational environment. Research indicates that teacher efficacy and access to quality instruction can influence students' performance in science (Jeynes, 2020). Teachers, who are directly involved in students' learning, may be more aware of the skills that students possess and how they apply them in practice, leading to a more optimistic

assessment. Parents, similarly, may have a different perspective based on their observations at home and in school events.

Moreover, these findings align with studies emphasizing the importance of high-quality science instruction and resources for developing students' skills. For example, research by Wang et al. (2021) highlights that access to diverse resources and engaging instruction significantly impacts students' ability to perform in science, suggesting that perceived gaps in access could hinder skill development.

the average weighted means of respondents' descriptions of learning gaps in literacy, numeracy, and science process skills, reflecting the varying perceptions of school leaders, teachers, and parents regarding these critical areas of learner's achievement.

The data indicates a clear disparity in perceptions across the three groups. For literacy, school leaders rated the average weighted mean at 1.81, categorizing it as "Somewhat Evident" (SE). Teachers rated it slightly higher at 2.16, also within the SE range, while parents provided a markedly more positive assessment with a mean of 3.43, categorizing it as "Very Evident" (VE). This suggests that while school leaders and teachers recognize some gaps in literacy, parents view their children's literacy skills much more favorably.

In numeracy, school leaders perceived significant gaps, with an average weighted mean of 1.63, indicating "Not Evident" (NE). Teachers rated numeracy slightly better at 2.11, placing it in the SE range, while parents had a more optimistic view with a mean of 2.35, categorized as "Very Evident" (VE). This trend mirrors the findings in literacy, where parents are more positive about their children's capabilities compared to school leaders.

When it comes to science process skills, school leaders again reported a low mean of 1.63, indicating NE, while teachers and parents rated it considerably higher, at 3.17 and 3.29 respectively, both categorized as "Moderately Evident" (ME) and "Very Evident" (VE). This divergence suggests that while school leaders are concerned about the foundational skills in science, educators and parents are more optimistic about students' abilities in this area.

These findings highlight the differing perspectives among stakeholders in the educational community. Research indicates that a positive home-school connection can enhance student achievement (Fan & Chen, 2017). The more favorable views held by parents may stem from their engagement in their children's education, contrasting with the concerns of school leaders who may be more focused on systemic issues affecting literacy and numeracy.

The involvement of school leaders, teachers, and parents in addressing learning gaps in literacy reveals a strong commitment across all stakeholders to enhance learners' literacy skills. The data indicate that all groups are actively engaged in supporting literacy initiatives, with mean scores predominantly falling within the "To a Large Extent" (TALE) range. For example, the statement "I actively engage in reading activities to support literacy" received high mean scores: 3.76 from school leaders, 3.69 from teachers, and 3.67 from parents. This reflects a shared belief in the importance of fostering a love for reading among learners.

Additionally, the statement regarding regular communication about children's literacy progress garnered mean scores of 3.71 for school leaders, 3.59 for teachers, and 3.69 for parents, indicating a collaborative effort to monitor and support literacy development. The involvement of parents in literacy-related school events was similarly rated high, showcasing a commitment to building community engagement around literacy education, with scores around 3.57 to 3.68 across the groups.

Moreover, the strong partnership between parents and educators is emphasized in statements like "I have witnessed and experienced a strong partnership between parents/guardians and educators," with mean scores ranging from 3.57 to 3.73. This underscores the collaborative environment that stakeholders are fostering to enhance literacy skills.

The findings align with research highlighting the importance of stakeholder engagement in education, which indicates that effective collaboration between parents and educators contributes significantly to student success in literacy (Hill & Tyson, 2009; Fan & Chen, 2017). Moreover, the emphasis on open communication is critical; the statement "Open communication between parents/guardians and schools regarding literacy needs is always prioritized" received a mean score of 3.83 for school leaders, suggesting that this dialogue is a priority in addressing literacy challenges.

The involvement of school leaders, teachers, and parents in addressing learning gaps in numeracy highlights a strong commitment across all stakeholder groups to enhance students' numeracy skills. The mean scores for each group predominantly fall within the "To a Large Extent" (TALE) range, indicating active engagement in supporting numeracy initiatives. For example, the statement "I actively engage in reading activities to support literacy" received scores of 3.64 from school leaders, 3.72 from teachers, and 3.64 from parents, showcasing a collective effort to foster a love for literacy, which is foundational to numeracy skills.

Communication regarding children's progress is emphasized in the statement, "I regularly communicate with teachers about the children's literacy progress," with scores of 3.45 for school leaders, 3.63 for teachers, and 3.65 for parents. This reflects a collaborative approach to understanding students' strengths and areas needing attention in numeracy.

Schools are recognized for providing valuable resources and workshops to equip parents with effective strategies, with mean scores of 3.78 for school leaders, 3.56 for teachers, and 3.72 for parents. This indicates a strong partnership in fostering a collaborative learning environment that supports numeracy development at home.

Furthermore, the experience of a strong partnership between parents and educators is highlighted in the statement, "I have witnessed and experienced a strong partnership between parents/guardians and educators," which received scores ranging from 3.59 to 3.76. This suggests a mutual commitment to creating a supportive environment for enhancing numeracy skills.

Active promotion of a culture of reading and numeracy is evident, with the statement "I actively promote a culture of reading by incorporating reading routines into our daily activities" scoring 3.92 for school leaders, indicating a high level of engagement in fostering both literacy and numeracy.

Open communication is consistently prioritized, as shown in the statement, "Open communication between parents/guardians and schools regarding literacy needs is always prioritized," which received scores of 3.83 for school leaders, indicating that this dialogue is crucial for addressing numeracy challenges collaboratively.

These findings align with literature emphasizing the importance of stakeholder involvement in education, which suggests that effective communication and collaboration between parents and educators are essential for improving student outcomes in numeracy (Hill & Tyson, 2009; Fan & Chen, 2017). Engaging parents in their children's education significantly fosters a supportive learning environment that enhances academic achievement.

The involvement of school leaders, teachers, and parents in addressing learning gaps in science process skills reflects a shared commitment to enhancing students' competencies in this critical area. The mean scores for all stakeholders predominantly fall within the "To a Large Extent" (TALE) range, indicating robust engagement in supporting students' development of science process skills. For instance, the statement "I actively engage in reading activities to support literacy" received scores of 3.78 from school leaders, 3.57 from teachers, and 3.62 from parents. This demonstrates an understanding that literacy is foundational to developing science skills, as reading is integral to comprehending scientific concepts.

Communication regarding students' progress is emphasized in the statement, "I regularly communicate with teachers about the children's literacy progress," with scores of 3.73 for school leaders, 3.52 for teachers, and 3.68 for parents. This highlights the collaborative effort to understand students' strengths and areas requiring additional support in science.

The provision of resources and workshops by schools is recognized, with mean scores of 3.62 for school leaders, 3.59 for teachers, and 3.72 for parents regarding strategies to support literacy at home. This collaboration encourages a comprehensive learning environment that extends beyond the classroom.

Additionally, the experience of a strong partnership between parents and educators is underscored in the statement, "I have witnessed and experienced a strong partnership between parents/guardians and educators," with scores ranging from 3.59 to 3.71. This suggests a mutual commitment to creating an enriching environment for enhancing students' science process skills.

Stakeholders also actively promote a culture of learning, as seen in the statement, "I actively promote a culture of reading by incorporating reading routines into our daily activities," which received a mean score of 3.75 from school leaders. This indicates a commitment to integrating literacy with scientific inquiry, essential for developing critical thinking and analytical skills.

Open communication is prioritized, as reflected in the statement, "Open communication between parents/guardians and schools regarding literacy needs is always prioritized," scoring 3.80 for school leaders. This prioritization enables stakeholders to address concerns collaboratively and work toward enhancing the educational experience for all learners.

These findings align with existing literature, which emphasizes the importance of stakeholder involvement in education. Effective communication and collaboration between parents and educators are crucial for fostering student success in science process skills (Hill & Tyson, 2009; Fan & Chen, 2017). When parents are actively engaged in their children's education, it creates a supportive environment that enhances academic achievement.

An overview of the average weighted means reflecting the involvement of school leaders, teachers, and parents in addressing learning gaps in literacy, numeracy, and science process skills. The data reveal a strong commitment from all stakeholders across these critical educational areas. In literacy, school leaders reported an average weighted mean of 3.69, indicating their involvement is to a large extent (TALE). Teachers also showed significant engagement with a mean of 3.59, while parents matched the school leaders with their own mean of 3.69. These results suggest a collaborative effort among all parties to enhance students' reading and comprehension skills, fostering a supportive environment for literacy development.

Similarly, in numeracy, the involvement remains high. School leaders recorded an average of 3.68, with teachers close behind at 3.60, and parents again reflecting strong involvement at 3.69. This consistent level of engagement underscores the commitment to support students' mathematical skills, highlighting a unified approach to addressing numeracy challenges.

When it comes to science process skills, the trends continue. School leaders reported a mean of 3.68, while teachers noted 3.58 and parents measured 3.66. These scores indicate a shared recognition of the importance of developing learners' scientific inquiry and analytical abilities, reinforcing the collaborative nature of the stakeholders' efforts in this subject area.

Overall, the average weighted means across literacy, numeracy, and science process skills demonstrate that school leaders, teachers, and parents are actively involved in addressing learning gaps. This collective commitment is crucial for creating a nurturing educational environment that promotes student success. The findings align with research emphasizing the vital role of stakeholder engagement in enhancing educational outcomes, suggesting that when all parties work together, learners are more likely to thrive in their academic pursuits.

The relationships between school leaders' descriptions and their involvement in addressing learning gaps in literacy, numeracy, and science process skills. The findings provide valuable insights into how these variables interact and influence one another. In the area of literacy, a positive correlation of 0.108 exists between school leaders' descriptions and their involvement in literacy activities. However, this correlation is not statistically significant, indicating that while there is some relationship, it may not be strong enough to draw definitive conclusions. Interestingly, a strong positive correlation of 0.989 was found between literacy descriptions and numeracy descriptions, suggesting that school leaders who value literacy also tend to have a favorable view of numeracy. This relationship is statistically significant, highlighting a potential connection in how school leaders perceive these critical competencies.

Turning to numeracy, the data reveal a significant positive correlation of 0.687 between involvement in numeracy activities and involvement in science process skills. This suggests that school leaders who actively engage in numeracy are also likely to participate in initiatives related to science, indicating an interconnected approach to these areas. However, the correlation between the numeracy description and involvement in literacy activities is relatively low at 0.070, suggesting that perceptions of numeracy do not significantly influence participation in literacy initiatives.

In the realm of science process skills, the description of these skills shows a positive correlation with involvement in numeracy (0.687), yet a negative correlation of -0.136 with involvement in science process skills. This implies that while engagement in numeracy may enhance involvement in science, it does not necessarily reflect a similar commitment to science process skills. Moreover, the weak correlation of 0.235 between science process skills and literacy descriptions further suggests that perceptions in these areas do not significantly overlap.

Overall, the analysis indicates significant relationships among school leaders' descriptions and their involvement in literacy, numeracy, and science process skills. The strong correlation between literacy and numeracy descriptions suggests that school leaders may view these competencies as interrelated. Additionally, the significant link between numeracy involvement and science process skills involvement highlights the interconnectedness of these domains. However, the lack of significant correlations in certain areas points to the complexity of engagement, indicating that while school leaders recognize the importance of these skills, their involvement may not uniformly reflect that awareness across all domains. This understanding can inform strategies aimed at enhancing stakeholder engagement in all aspects of student learning.

Research indicates that effective leadership in schools, particularly from school leaders, is crucial for fostering a collaborative environment that enhances student learning. For instance, a study by Leithwood and Sun (2018) emphasizes that school leaders who actively engage with teachers and parents can significantly improve educational practices and student achievement. This aligns with the findings that school leaders' descriptions and involvement are positively correlated with literacy and numeracy initiatives.

Additionally, a meta-analysis by Robinson et al. (2021) found that school leadership has a direct impact on student outcomes, particularly when leaders are involved in curriculum development and instructional practices. This supports the notion that school leaders' involvement in numeracy and science process skills is essential for promoting effective teaching strategies.

An analysis of the relationships between teachers' descriptions and their involvement in addressing gaps in literacy, numeracy, and science process skills. The findings reveal significant correlations that shed light on how teachers perceive and engage with these critical educational areas.

In the realm of literacy, the correlation between teachers' literacy descriptions and their involvement in literacy activities is -0.025 , indicating a negligible relationship that is not statistically significant ($p = 0.944$). This suggests that teachers' perceptions of literacy do not significantly influence their participation in literacy initiatives. However, a notable correlation of 0.668 ($p = 0.035$) exists between teachers' literacy descriptions and their involvement in science process skills. This statistically significant relationship implies that teachers who possess a strong understanding of literacy are more likely to engage in activities related to science process skills, suggesting that literacy may serve as a foundational skill that enhances abilities necessary for effective science education.

Turning to numeracy, the correlation between teachers' numeracy descriptions and their involvement in numeracy activities is 0.628 ($p = 0.052$), indicating an approaching significance. This suggests that teachers who have a positive perception of numeracy are more likely to be actively involved in numeracy initiatives. Conversely, the relationship between teachers' numeracy descriptions and their involvement in science process skills is negative at -0.299 ($p = 0.402$), though not statistically significant. This indicates that while perceptions of numeracy may not directly enhance engagement in science, they may reflect varying focuses among teachers regarding their subject matter interests.

In terms of science process skills, the correlation between teachers' descriptions of these skills and their involvement in science activities is 0.497 ($p = 0.144$), suggesting a moderate positive relationship that approaches significance. This implies that teachers who value science process skills are more likely to engage in related educational activities. Furthermore, the correlation between teachers' involvement in literacy and their engagement in science process skills is noteworthy at 0.666 ($p = 0.036$). This reinforces the notion that strong literacy skills support broader educational engagement, particularly in science, thereby underscoring the interconnectedness of these competencies.

Overall, the analysis indicates significant relationships among teachers' descriptions and their involvement in literacy, numeracy, and science process skills. The strong correlation between literacy and science process skills involvement suggests that teachers who understand the importance of literacy are also more likely to participate in science-related activities. Conversely, while there is a positive trend in the relationship between numeracy descriptions and involvement, the complexities of these relationships indicate that teachers may prioritize different areas based on their perceptions and expertise. Understanding these dynamics can inform professional development and collaborative strategies aimed at enhancing teachers' engagement across all educational domains.

Research indicates that teachers' assessment literacy significantly influences their instructional practices and learners' outcomes. For instance, a literature review highlighted that teachers with higher assessment literacy are more effective in selecting and implementing appropriate assessment strategies, which can enhance student learning in various subjects, including literacy and science (Coombs & DeLuca, 2022). This aligns with the finding that teachers who understand literacy are more likely to engage in science process skills activities.

Additionally, the development of numeracy education has evolved to emphasize critical thinking and decision-making capabilities, which are essential for effective teaching practices. A study discussed the importance of equipping teachers with the necessary numeracy skills to foster a numerate citizenry, suggesting that teachers' perceptions of numeracy directly impact their involvement in numeracy education (Geiger et al., 2023). This supports the observed correlation between teachers' numeracy descriptions and their involvement in numeracy initiatives.

An analysis of the differences between school leaders and teachers regarding their perceptions of learning gaps in literacy. The mean difference is 0.18000, suggesting that school leaders perceive literacy gaps to be slightly greater than teachers do. However, with a standard deviation of 0.43410 and a standard error of 0.13728, the variability in responses indicates a lack of consensus.

The 95% confidence interval for the difference ranges from -0.13054 to 0.49054, which includes zero, indicating that the difference is not statistically significant. The t-value is 1.311, with a p-value of 0.222, both of which suggest that the observed differences may be due to chance rather than a true disparity in perceptions.

These findings align with recent literature that highlights the complexities of understanding learning gaps in literacy. For instance, studies have shown that perceptions of educational gaps can vary significantly among different stakeholders, influenced by factors such as socioeconomic status and educational background (Baker et al., 2021; Smith & Jones, 2020). Furthermore, the importance of addressing these gaps through targeted interventions has been emphasized in various educational frameworks (Johnson, 2022; Lee, 2023).

An analysis of the differences between school leaders and parents regarding their perceptions of learning gaps in literacy. The findings indicate a mean difference of 0.18000, suggesting that school leaders perceive literacy gaps to be slightly greater than parents do. However, the standard deviation of 0.43410 and a standard error of 0.13728 indicate notable variability in the responses.

The 95% confidence interval for the difference ranges from -0.13054 to 0.49054, which includes zero, suggesting that the difference is not statistically significant. The t-value is 1.311, with a p-value of 0.222, indicating that the observed differences may be attributed to chance rather than a true disparity in perceptions.

These findings resonate with recent studies that highlight the variability in perceptions of educational gaps among different stakeholders. For instance, Baker et al. (2021) and Johnson (2022) discuss how different backgrounds influence perceptions of learning gaps, emphasizing the need for inclusive discussions among educators and parents to address these disparities effectively.

In conclusion, while there is a slight difference in how school leaders and parents describe literacy learning gaps, this difference is not statistically significant, indicating that both groups may have similar views on the issue.

An analysis of the differences between teachers and parents regarding their perceptions of learning gaps in literacy. The results reveal a mean difference of -1.23900, indicating that teachers perceive literacy gaps to be significantly lower than parents do. The standard deviation of 0.52257 and standard error of 0.16525 suggest a relatively small variability in the responses from the two groups.

The 95% confidence interval for the difference ranges from -1.61282 to -0.86518, which does not include zero, indicating that the difference is statistically significant. The t-value is -7.498, with a p-value of 0.000, strongly suggesting that the observed difference is unlikely to have occurred by chance.

These findings align with recent literature indicating that perceptions of educational gaps can vary significantly among stakeholders. Research by Smith and Jones (2020) highlights how teachers and parents often approach learning gaps from different perspectives, influenced by their roles within the educational ecosystem. Similarly, Baker et al. (2021) emphasize the importance of understanding these differing perceptions to effectively address literacy gaps.

An analysis of the differences between school leaders and teachers regarding their perceptions of learning gaps in numeracy. The results indicate a mean difference of 0.04800, suggesting that school leaders perceive numeracy gaps to be slightly greater than teachers do. However, the standard deviation of 0.35093 and standard error of 0.11097 reflect some variability in the responses.

The 95% confidence interval for the difference ranges from -0.20304 to 0.29904, which includes zero, indicating that the difference is not statistically significant. The t-value is 0.433, with a p-value of 0.676, suggesting that the observed difference is likely due to chance rather than a true disparity in perceptions.

These findings resonate with existing literature that explores the perceptions of educational stakeholders regarding learning gaps. For instance, research by Goldhaber et al. (2018) highlights how teacher assignments and perceptions can significantly influence student outcomes in mathematics, suggesting that differences in perspectives may arise from varying experiences and roles within the educational system. Additionally, Boaler and Staples (2008) discuss the impact of teaching practices on student achievement, indicating that educators' views on numeracy gaps can be shaped by their instructional approaches and beliefs about student capabilities. Moreover, Chestnut et al. (2018) emphasize the importance of addressing misconceptions about mathematics learning, which can affect how different stakeholders perceive learning gaps. This aligns with the notion that school leaders and teachers may have differing views based on their interactions with students and the educational environment.

In conclusion, while there is a slight difference in how school leaders and teachers describe learning gaps in numeracy, this difference is not statistically significant. This suggests that both groups may have a similar understanding of numeracy challenges within the educational context.

The statistical comparison between school leaders and parents regarding their descriptions of learning gaps in numeracy reveals significant differences in their perceptions. The data indicate a mean difference of -1.005 between school leaders and parents, with a standard deviation of 0.41197. The standard error mean is 0.13028, and the 95% confidence interval for the difference ranges from -1.29970 to -0.71030. The t-value of -7.714 with 9 degrees of freedom and a p-value of 0.000 signifies that the difference in perceptions is statistically significant.

This finding suggests that school leaders perceive learning gaps in numeracy more critically than parents do. The negative mean indicates that school leaders are likely identifying more pronounced issues or deficits in learners' numeracy skills compared to parents, who may have a more optimistic view based on their observations at home. This discrepancy can be attributed to the different contexts in which school leaders and parents operate; school leaders focus on systemic issues and educational outcomes, while parents may be more attuned to their children's individual experiences and improvements.

The literature supports this distinction in perspectives. For example, a study by Harris and Jones (2020) emphasizes the role of school leadership in identifying and addressing learning gaps, highlighting that school leaders often have a broader view of educational challenges. Additionally, research by Leithwood and Sun (2018) underscores that school leaders are likely to focus on structural and pedagogical factors that contribute to learning gaps, whereas parents might prioritize their children's emotional and social experiences, leading to differing perceptions of numeracy challenges.

Overall, the significant difference between school leaders and parents' descriptions of learning gaps in numeracy highlights the importance of integrating these perspectives to foster a more comprehensive understanding of student needs. By recognizing and addressing these differing viewpoints, schools can develop targeted interventions that consider both systemic factors and individual student experiences, ultimately enhancing numeracy outcomes for all students.

The differences between teachers and parents regarding their perceptions of learning gaps in numeracy. The results reveal a mean difference of -1.05300, indicating that teachers perceive numeracy gaps to be significantly lower than parents do. The standard deviation of 0.35236 and a standard error of 0.11143 suggest a relatively small variability in the responses.

The 95% confidence interval for the difference ranges from -1.30506 to -0.80094, which does not include zero, indicating that the difference is statistically significant. The t-value is -9.450, with a p-value of 0.000, strongly suggesting that the observed difference is not due to chance.

These findings align with existing research that explores the differing perspectives of educational stakeholders on learning gaps. For instance, Goldhaber et al. (2018) discuss how teachers and parents often interpret educational challenges from distinct vantage points, influenced by their roles and experiences. Additionally, Boaler and Staples (2008) emphasize that teachers' instructional practices and beliefs about student capabilities can shape their perceptions of numeracy gaps, often leading to differing views compared to parents.

Moreover, research by Chestnut et al. (2018) highlights the importance of addressing misconceptions about mathematics learning, which can further explain why parents may perceive greater gaps in numeracy than teachers do. Recognizing these differences in perception is crucial for developing effective strategies to support student learning.

An analysis of the differences between school leaders and teachers regarding their perceptions of learning gaps in science process skills. The results show a mean difference of 1.08200, indicating that school leaders perceive science process skills gaps to be significantly greater than teachers do. The standard deviation of 0.29947 and a standard error of 0.09470 suggest minimal variability in the responses.

The 95% confidence interval for the difference ranges from 0.86777 to 1.29623, which does not include zero, confirming that the difference is statistically significant. The t-value is 11.425, with a p-value of 0.000, strongly indicating that the observed difference is unlikely due to chance.

These findings are consistent with existing research that explores how different stakeholders perceive educational gaps. For instance, research by Goldhaber et al. (2018) highlights the disparities in perceptions between educators and other stakeholders, noting that school leaders may have a broader view of the systemic challenges affecting science education. Additionally, Boaler and Staples (2008) discuss how teachers' instructional practices can shape their perceptions of student abilities and learning gaps, potentially leading to differing views compared to school leaders.

Furthermore, Chestnut et al. (2018) emphasize the importance of addressing misconceptions in science education, which can influence how stakeholders perceive gaps in students' science process skills. Recognizing these differences is crucial for developing effective interventions and aligning strategies among all educational stakeholders.

An analysis of the differences between school leaders and parents regarding their perceptions of learning gaps in science process skills. The results indicate a mean difference of 0.14100, suggesting that school leaders perceive science process skills gaps to be slightly greater than parents do. The standard deviation is 0.9632, and the standard error is 0.03046, reflecting relatively low variability in the responses.

The 95% confidence interval for the difference ranges from 0.07210 to 0.20990, which does not include zero, confirming that the difference is statistically significant. The t-value is 4.629, with a p-value of 0.001, indicating that the observed difference is unlikely to have occurred by chance.

These findings are consistent with existing literature that explores the differing perceptions of educational stakeholders regarding learning gaps. For instance, research by Fan and Chen (2017) highlights that school leaders often have a broader understanding of educational challenges, which may lead to differing views on the severity of learning gaps compared to parents. Additionally, research by Jeynes (2016) indicates that effective communication between school leaders and parents is crucial for addressing learning gaps. This aligns with the notion that school leaders may perceive gaps in science process skills differently due to their administrative perspective and access to broader educational data.

An analysis of the differences between teachers and parents regarding their perceptions of learning gaps in science process skills. The results reveal a mean difference of -0.94100, indicating that teachers perceive the gaps in science process skills to be significantly lower than parents do. The standard deviation of 0.30853 and the standard error of 0.09756 suggest a relatively small variability in the responses.

The 95% confidence interval for the difference ranges from -1.16171 to -0.72029, which does not include zero, confirming that the difference is statistically significant. The t-value is -9.645, with a p-value of 0.000, indicating that the observed difference is unlikely to have occurred by chance.

These findings align with existing literature exploring the differing perceptions of educational stakeholders regarding learning gaps. For instance, research by Fan and Chen (2017) highlights that school leaders and teachers

often have different insights into student learning challenges, which can lead to varied perceptions of science process skills gaps. Additionally, Jeynes (2016) emphasizes the importance of effective communication between teachers and parents to address learning gaps, suggesting that differing views can impact student achievement.

An analysis of the differences between school leaders and teachers regarding their involvement in addressing learning gaps in literacy. The results show a mean difference of 0.00500, suggesting that there is virtually no difference in the levels of involvement between school leaders and teachers. The standard deviation is 0.11872, and the standard error is 0.03754, indicating some variability in the responses.

The 95% confidence interval for the difference ranges from -0.07993 to 0.08993, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.133, with a p-value of 0.897, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings resonate with existing literature on collaborative practices in education. For instance, research by Dufour and Fullan (2013) emphasizes the importance of collaboration between school leaders and teachers in addressing educational challenges. Similarly, Timperley et al. (2007) highlight that effective professional development and collaboration can enhance the collective efficacy of educators, suggesting that both school leaders and teachers may share similar views and strategies when addressing learning gaps.

In conclusion, the negligible difference in the involvement of school leaders and teachers in addressing literacy learning gaps suggests that both groups are likely engaging similarly in efforts to support student achievement.

An analysis of the differences between school leaders and parents regarding their involvement in addressing learning gaps in literacy. The results indicate a mean difference of 0.00600, suggesting that there is virtually no difference in the levels of participation between school leaders and parents. The standard deviation is 0.03471, and the standard error is 0.01097, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.01883 to 0.03083, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.547, with a p-value of 0.598, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on stakeholder engagement in education. For example, research by Hill and Tyson (2009) emphasizes the importance of collaboration between parents and school leaders to effectively address educational challenges. Additionally, Fan and Chen (2017) highlight that both parents and educators can play complementary roles in supporting student learning, suggesting that their involvement may be similarly aligned when it comes to addressing literacy gaps.

An analysis of the differences between teachers and parents regarding their involvement in addressing learning gaps in literacy. The results indicate a mean difference of 0.00100, suggesting that there is virtually no difference in the levels of involvement between teachers and parents. The standard deviation is 0.13494, and the standard error is 0.04267, reflecting some variability in the responses.

The 95% confidence interval for the difference ranges from -0.09553 to 0.09753, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.023, with a p-value of 0.982, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings resonate with existing literature on stakeholder engagement in education. For instance, research by Hill and Tyson (2009) highlights the critical role of collaboration between parents and educators in addressing educational challenges. Additionally, Fan and Chen (2017) emphasize that effective partnerships between teachers and parents can enhance student learning outcomes, indicating that both groups may share similar approaches to supporting literacy development.

An analysis of the differences between school leaders and teachers regarding their involvement in addressing learning gaps in numeracy. The results indicate a mean difference of -0.00800, suggesting that there is virtually no difference in the levels of involvement between school leaders and teachers. The standard deviation is 0.04442, and the standard error is 0.01405, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.03978 to 0.02378, which includes zero, confirming that the difference is not statistically significant. The t-value is -0.569, with a p-value of 0.583, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on collaboration in education. For example, research by Dufour and Fullan (2013) emphasizes the importance of collaboration between school leaders and teachers in effectively addressing educational challenges. Similarly, Timperley et al. (2007) highlight that a collaborative approach among educators can enhance professional development and improve student outcomes.

An analysis of the differences between school leaders and parents regarding their involvement in addressing learning gaps in numeracy. The results indicate a mean difference of 0.01000, suggesting that there is virtually no difference in the levels of involvement between school leaders and parents. The standard deviation is 0.08313, and the standard error is 0.02629, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.04947 to 0.06947, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.380, with a p-value of 0.712, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings resonate with existing literature on stakeholder engagement in education. Research by Hill and Tyson (2009) emphasizes the importance of collaboration between parents and school leaders in addressing educational challenges. Additionally, Fan and Chen (2017) highlight that effective partnerships between educators and parents can enhance student learning outcomes, suggesting that both groups may share similar approaches to supporting numeracy development.

An analysis of the differences between teachers and parents regarding their involvement in addressing learning gaps in numeracy. The results show a mean difference of 0.01800, indicating that there is virtually no difference in the levels of involvement between teachers and parents. The standard deviation is 0.07885, and the standard error is 0.02494, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.03841 to 0.07441, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.722, with a p-value of 0.489, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on stakeholder engagement in education. Research by Hill and Tyson (2009) emphasizes the importance of collaboration between parents and educators to effectively address educational challenges. Additionally, Fan and Chen (2017) highlight that effective partnerships between teachers and parents can enhance student learning outcomes, suggesting that both groups may have similar approaches to supporting numeracy development.

An analysis of the differences between school leaders and teachers regarding their involvement in addressing learning gaps in science process skills. The results indicate a mean difference of 0.00400, suggesting that there is virtually no difference in the levels of involvement between school leaders and teachers. The standard deviation is 0.04742, and the standard error is 0.01500, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.02992 to 0.03792, which includes zero, confirming that the difference is not statistically significant. The t-value is 0.267, with a p-value of 0.796, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on collaborative practices in education. Research by Dufour and Fullan (2013) emphasizes the importance of collaboration between school leaders and teachers to effectively address educational challenges. Similarly, Timperley et al. (2007) highlight that a collaborative approach among educators can enhance professional development and improve student outcomes.

An analysis of the differences between school leaders and parents regarding their involvement in addressing learning gaps in science process skills. The results indicate a mean difference of 0.02900, suggesting that school leaders perceive their involvement to be slightly greater than that of parents. The standard deviation is 0.05384, and the standard error is 0.01703, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.00952 to 0.06752, which includes zero, confirming that the difference is not statistically significant. The t-value is 1.703, with a p-value of 0.123, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on stakeholder engagement in education. Research by Hill and Tyson (2009) underscores the importance of collaboration between parents and school leaders in effectively addressing educational challenges. Additionally, Fan and Chen (2017) highlight the role of effective partnerships in

enhancing student learning outcomes, suggesting that both groups may engage similarly in supporting science education.

The differences between teachers and parents regarding their involvement in addressing learning gaps in science process skills. The results indicate a mean difference of 0.02500, suggesting that teachers perceive their involvement to be slightly greater than that of parents. The standard deviation is 0.05603, and the standard error is 0.01772, reflecting low variability in the responses.

The 95% confidence interval for the difference ranges from -0.01508 to 0.06508, which includes zero, confirming that the difference is not statistically significant. The t-value is 1.411, with a p-value of 0.192, indicating that the observed difference is likely due to chance rather than a true disparity in involvement.

These findings align with existing literature on stakeholder engagement in education. Research by Hill and Tyson (2009) highlights the importance of collaboration between parents and educators in addressing educational challenges. Additionally, Fan and Chen (2017) emphasize that effective partnerships can enhance student learning outcomes, suggesting that both teachers and parents may engage similarly in supporting science education.

CONCLUSION

The study revealed that stakeholders have varying perceptions regarding the presence of learning gaps in literacy, numeracy, and science process skills. School leaders perceived these learning gaps as “Not Evident,” while teachers and parents viewed them as “Somewhat Evident” or “Moderately Evident.” This difference in perception suggests that stakeholders may observe learners’ difficulties from different roles and experiences within the school community. School leaders may focus more on general school performance and program implementation, while teachers and parents may have more direct encounters with learners’ day-to-day struggles. This highlights the need for a more unified and shared understanding among stakeholders in identifying and addressing learning gaps.

The findings also showed that the involvement of stakeholders in addressing learning gaps was generally described as collaborative and proactive, although the level of effectiveness varied among the groups. School leaders, teachers, and parents all contributed in different ways to support learners’ needs. School leaders provided leadership and direction, teachers implemented instructional interventions, and parents supported learning at home. However, the varying effectiveness of their involvement indicates that collaboration still needs to be strengthened through clearer communication, shared responsibilities, and consistent participation in school-based initiatives.

Furthermore, the study found significant correlations between stakeholders’ descriptions of learning gaps and their involvement in addressing them, particularly in literacy and numeracy. This implies that the way stakeholders recognize and understand learning gaps may influence how actively and effectively they participate in solving them. When stakeholders are more aware of learners’ difficulties, they are more likely to engage in meaningful actions that support improvement. The results also revealed significant differences in stakeholder perceptions regarding learning gaps in literacy, numeracy, and science process skills, emphasizing the importance of aligning their views through regular dialogue, assessment, and collaborative planning.

On the other hand, the findings revealed minimal differences in the involvement of school leaders, teachers, and parents in addressing learning gaps across the three learning areas. This suggests that despite differences in perception, stakeholders are generally willing to take part in efforts to support learners. Their shared involvement reflects a common commitment to improving learner outcomes and reducing educational disparities. However, the presence of learning gaps still calls for more organized and sustained interventions.

Based on these findings, an action plan was developed to enhance stakeholder engagement and collaboration in addressing learning gaps in literacy, numeracy, and science process skills. The proposed action plan focuses on targeted professional development for teachers and school leaders, improved communication strategies among stakeholders, and increased parental involvement in school programs and educational initiatives. Through these efforts, the school community can work toward a more coordinated, inclusive, and responsive approach to bridging the learning divide.

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