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Math 360 Vertical Learning in a Fourth-Grade Inclusive Classroom: A Qualitative Case Study of Teacher and Student Experiences

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Abstract

This qualitative case study explored the implementation of Math 360 Vertical Learning in a fourth-grade inclusive classroom at Vail Pittman Elementary School in the Clark County School District. The study addressed the need to better understand how classroom-based mathematics interventions support differentiated instruction, student engagement, and mathematical learning in inclusive elementary settings. Specifically, it examined the experiences and perceptions of participants regarding the use of Math 360 Vertical Learning in mathematics instruction. Participants included one fourth-grade teacher and ten fourth-grade students from one inclusive classroom, selected through criterion-based purposive sampling. Data were gathered through semi-structured interviews, classroom observations, and document analysis, and were analyzed using thematic analysis. The findings revealed four major themes: (1) differentiated and data-driven instructional practices, (2) enhanced student engagement and participation, (3) improved mathematical understanding through scaffolded learning, and (4) responsive support for learners with varied mathematical needs in an inclusive classroom. The results suggest that Math 360 Vertical Learning supported the teacher in adjusting instruction based on student readiness, promoted active participation in mathematics activities, and helped students develop mathematical understanding through guided and structured learning experiences. The study contributes to the growing literature on inclusive mathematics instruction by highlighting how Math 360 Vertical Learning may serve as a responsive instructional approach for supporting diverse learners in elementary classroom settings.

Keywords: Math 360 Vertical Learning, inclusive mathematics education, differentiated instruction, scaffolded learning, student engagement, qualitative case study

Introduction

Mathematical achievement remains a significant indicator of elementary learners' learning success and readiness. This factor continues to alarm the academic community in the United States, especially in Title 1 schools. Most of these schools have students who come from diverse backgrounds and show different learning needs. In this sense, it is a challenge to the general education class, but more challenging in an inclusive classroom where students with or without disabilities learn together and need different types of assistance. Research confirms that by utilizing targeted interventions and strategies can address learning gaps and consequently improve mathematical achievement among students.

Improving math achievement has become a major priority of Vail Pittman Elementary School in the Clark County School District after the school's Nevada Performance Framework (NPK) rating regressed from three stars to two stars. This regression emphasized that there is a need for strategies that are new and relevant to their background to help improve their math performance. As a Title 1 school with different types of students, including those who have disabilities, the school is optimistic to find ways and start to explore techniques to strengthen math instruction and scaffold students who have difficulties in learning mathematics.

One of the strategies being used is Math 360 Vertical Learning. This approach aims to concentrate on meeting the needs of students by providing instructional support that is imperative to their needs. This strategy is a data-driven

approach that guides teachers to be objective in managing students' academic performance in math by fostering active learning and activities that lead them to understand mathematical concepts better. Other personalized instruction, on going assessement, and targeted support can help students address learning gaps and improve their mathematical competencies. Through this vertical learning approach, students are allowed to work on skills that match their current level while progressing toward grade-level expectations.

While existing literature has documented the effectiveness of a variety of mathematics intervention programs that aim to improve students' mathematical competencies, many of these studies used a quantitative approach to measure the academic performance and outcomes of the learners. Frequently, it focused on investigating achievement gains, proficiency rates, and the effectiveness of a program in different grade levels. In this sense, there is limited evidence on those studies that used a qualitative approach, especially a qualitative case study where experiences and perceptions of the elementary participants are targeted. Moreover, the 360 Vertical learning strategy has been employed in some other countries in the United States of America, but has not been subjected to a study.

This study aims to explore the experiences and perceptions of teachers and students about the implementation of Math 360 vertical learning in a fourth-grade inclusive classroom at Vail Pittman Elementary School. Objectively, the study seeks to understand how Math 360 contributes to the instructional framework among teachers, student engagement, mathematical learning experiences, and support for diverse learners. Through this endeavor, the study aims to extract insights that may raise awareness and inform future instructional decisions, especially regarding the improvement of mathematical competencies.

The findings of this study may contribute to the growing body of knowledge on mathematics intervention and inclusive education. This may provide administrators with evidence-based solutions to timely problems among students related to learning mathematical competencies. In this regard, the school may arrive at sound decision-making and policy-making for the implementation of the Math 360 vertical learning in Title I schools facing performance challenges. Most importantly, the study seeks to amplify the voices of students and teachers whose experiences can inform more equitable and responsive mathematics instruction. Thus, the study seeks to answer the following questions:

1. How do fourth-grade students describe their experiences with Math 360 Vertical Learning in an inclusive classroom setting?
2. How does the teacher perceive the implementation of Math 360 Vertical Learning in supporting mathematics instruction in an inclusive classroom?
3. What instructional practices and learning experiences do participants identify as beneficial in the implementation of Math 360 Vertical Learning?

Literature Review

This section presents a review of related literature and studies that are relevant to the research topic. It discusses previous findings, ideas, and information from different sources to provide a better understanding of the subject. Reviewing these works helps identify important concepts, research gaps, and insights that support the current study and its objectives.

Mathematics Achievement and School Improvement Initiatives

Learners' mathematical achievement continues to be a serious issue among students in schools across the United States. In this regard, schools are intensifying the implementation of interventions and programs to address the learning gaps in mathematics. This problem is more experienced, particularly among students who are economically

challenged. With this, schools need improvement and often adopt evidence-based instructional interventions framed to increase learning outcomes. Research corroborates that when interventions and programs are targeted and address the needs of the learners with objective assessment practices, they can significantly improve students' Mathematical achievement (Evidence for ESSA, 2025).

For schools that have a high percentage of students who are economically deprived, such as Title 1 schools, mathematics performance is still the top priority since it contributes to the performance ratings of the school. In this connection, intervention programs are essential and important in the students' mathematical achievement and in the school's performance as a whole.

Mathematics Intervention Programs and Personalized Learning

In the educational reforms, personalized and data-driven instruction in mathematics is acknowledged currently. Interventions and other programs related to Math 360 vertical learning are designed to support diverse students and learning experiences to address their varied needs, especially in terms of fostering mastery of mathematical concepts as a foundation. With the advent of these interventions and programs, technology is adapted and integrated to guide teachers in their instruction and monitor ongoing progress to scaffold learning for students who have difficulties in mathematical concepts.

Based on the research evidence, programs and interventions demonstrate positive effects on students' mathematics performance and achievement. Studies on Math 180, a widely used mathematics intervention program, revealed that the program led to greater improvements in math achievement than regular classroom instruction. Moreover, several studies show that students who participate actively achieve higher scores on mathematics assessments. This indicates that targeted intervention programs can help students learn mathematical concepts more effectively (Evidence for ESSA, 2025). These findings recommend that personalized and adaptive teaching strategies can increase students' mathematical performance.

Additionally, studies on mathematics education for inclusive classrooms, such as those for students with learning difficulties, demonstrate that clear, comprehensive teaching delivery, scheduled assessment and monitoring, timely feedback, and a peer-assisted approach can foster students' math competencies. Thus, students who have difficulties in math achieve better learning outcomes (Gersten et al., 2009).

Inclusive Mathematics Instruction in Elementary Classrooms

Inclusive education aims to provide equal opportunities for learners, including those with learning difficulties, in a safe, conducive learning environment. In mathematics class, teachers are expected to support diverse learners' needs by using different teaching strategies while delivering instruction in terms of grade-level content. To do this effectively, teachers utilized differentiated instruction, flexible grouping, collaborative tasks, and individual support.

A systematic review by Radzi and Mahmud (2024) found that inclusive teaching approaches in mathematics improve student engagement and academic achievement. The findings also highlighted that teachers' professional development, technology integration, and fair instructional practices in supporting diverse learners in primary school mathematics classrooms are important.

A relevant study of Jütte and Lüken (2021) noted that mathematics instruction has focused on designing a learning setting that stimulates active participation from students who have learning abilities while fostering understanding of mathematical concepts. Thus, the review suggests that when instructional practices are responsive and aligned to the needs of the students, inclusive mathematics education is most effective.

Similarly, students with intellectual disabilities achieved better mathematics outcomes in inclusive classrooms than those taught in separate, specialized settings (Ilahi et al., 2025).

Mathematics Instruction for Students with Disabilities

In the past two decades, the inclusion of students with learning disabilities in general education mathematics classrooms has increased. To support the needs of diverse learners, researchers investigated instructional practices in mathematics. The findings suggest that teachers need to employ varied strategies to address learning gaps among students who have disabilities. Thus, learning outcomes can be achieved Elliott et al., 2017).

Bottge et al. (2015) found that mathematics performance improves when collaborative work is present in an inclusive education classroom, with or without disabilities. Findings reveal that when teachers in special and general education work together, learners receive a better experience of learning.

Overall, these studies show the importance of making mathematics instruction accessible, flexible, and supportive in inclusive classrooms. The findings are especially important for elementary schools that use intervention programs to raise achievement among students with diverse learning needs.

Methodology

This section presents the methods and procedures of the study. These methods helped make this research more rigorous and adhered to ethical considerations and integrity.

Research Design

This study employed a qualitative case study research design to explore the experiences and perceptions of teachers and students regarding the implementation of Math 360 Vertical Learning in a fourth-grade inclusive classroom at Vail Pittman Elementary School. A qualitative case study was appropriate because it allowed for an in-depth examination of a bounded system—the implementation of Math 360 Vertical Learning within a specific educational setting. Through the collection and analysis of rich descriptive data from participants, the study sought to understand how the intervention influenced instructional practices, student engagement, mathematical learning experiences, and support for diverse learners. By focusing on a single case, the study provided a contextualized understanding of how Math 360 Vertical Learning is experienced and perceived in an inclusive Title I elementary school environment.

Research Participants

The participants of this study consisted of one fourth-grade inclusive education teacher who consistently used the strategy and ten fourth-grade students from one class, who were involved in the implementation of Math 360 Vertical Learning at Vail Pittman Elementary School. The study employed purposive sampling to select participants who had direct experience with the Math 360 intervention and could provide rich and relevant information regarding its implementation. The teacher participant was selected based on his active role in planning and facilitating Math 360 Vertical Learning, while the student participants were chosen based on their participation in the program and their willingness to share their learning experiences. Purposive sampling was considered appropriate for this qualitative case study because it enabled the researcher to identify information-rich participants who could provide meaningful insights into the implementation of Math 360 Vertical Learning, its influence on instructional practices, student engagement, mathematical learning experiences, and support for diverse learners within an inclusive fourth-grade classroom setting.

Research Instrument

The primary research instrument in this qualitative case study was the researcher, who was responsible for collecting, analyzing, and interpreting the data. To facilitate systematic data collection, the researcher utilized a semi-structured interview guide for both teacher and student participants. The interview guide consisted of open-ended questions designed to elicit participants' experiences, perceptions, and insights regarding the implementation of Math 360 Vertical Learning in one fourth-grade classroom. In addition, an observation protocol was used to

document classroom interactions, instructional practices, student engagement, and the implementation of Math 360 activities. Relevant documents, such as lesson plans, assessment records, and instructional materials related to Math 360 Vertical Learning, were also reviewed using a document analysis checklist. These instruments enabled the researcher to gather rich, detailed, and contextualized data necessary to understand the implementation and perceived impact of Math 360 Vertical Learning within the case under investigation.

Data Gathering Procedure

Before data collection, the researcher secured permission from the administration of Vail Pittman Elementary School to conduct the study. After receiving approval, potential participants were identified through purposive sampling and were invited to participate in the study. Informed consent was obtained from the teacher participant, while parental consent and student assent were secured for the student participants. Data were gathered through semi-structured one-on-one interviews with one teacher and ten students to explore their experiences and perceptions regarding the implementation of Math 360 Vertical Learning. Three classroom observations were also conducted to document instructional practices, student engagement, and interactions during Math 360 activities. In addition, relevant documents, such as lesson plans, assessment data, and instructional materials, were reviewed to provide contextual information and support data triangulation. All interviews were audio-recorded with participants' permission and transcribed verbatim for analysis. The collected data were organized, coded, and analyzed to identify recurring patterns, themes, and insights related to the implementation of Math 360 Vertical Learning in the inclusive fourth-grade classroom.

Trustworthiness of the Study

The trustworthiness of this qualitative case study was ensured through the application of the criteria of credibility, transferability, dependability, and confirmability, which are widely recognized as essential standards for rigor in qualitative research (Shenton, 2004; Korstjens & Moser, 2018). Credibility was established through data triangulation by utilizing multiple sources of evidence, including interviews, classroom observations, and document analysis, as well as member checking to verify the accuracy of participants' responses and the researcher's interpretations. Transferability was enhanced by providing rich and detailed descriptions of the research setting, participants, and implementation of Math 360 Vertical Learning, allowing readers to determine the applicability of the findings to similar contexts. Dependability was addressed through the maintenance of an audit trail documenting all stages of the research process, including data collection, coding, and thematic analysis. Confirmability was ensured through reflexive journaling, systematic documentation of analytical decisions, and the preservation of research records to demonstrate that the findings were grounded in the participants' experiences rather than the researcher's personal biases. These strategies contributed to the rigor, consistency, and overall trustworthiness of the study.

Ethical Consideration

Ethical principles were carefully observed throughout the conduct of this study to protect the rights, privacy, and well-being of all participants. Before data collection, approval was obtained from the appropriate institutional and school authorities. Informed consent was secured from the teacher participants, while parental consent and student assent were obtained for the student participants, as the study involved minors. Participants were informed of the purpose of the study, the procedures involved, their voluntary participation, and their right to withdraw from the study at any time without penalty. To ensure confidentiality and anonymity, pseudonyms were used in place of participants' names, and any identifying information was removed from the research records and reports. All interview recordings, transcripts, observation notes, and related documents were stored securely and were accessible only to the researcher. The data collected were used solely for academic and research purposes. Throughout the study, the researcher maintained respect, fairness, and sensitivity toward all participants, ensuring that no physical, psychological, social, or academic harm resulted from their participation in the research.

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Moreover, artificial intelligence (AI) tools were utilized in a limited and supportive capacity during the preparation of this research manuscript. Specifically, AI-assisted applications were used to check grammar, improve sentence structure, enhance clarity, and refine word choice to ensure the quality and readability of the written document. However, AI was not used to generate research data, conduct data analysis, develop themes, interpret findings, or draw conclusions. All aspects of the research process, including the collection, coding, analysis, interpretation, and presentation of findings, were performed solely by the researcher. The researcher maintained full responsibility for the accuracy, integrity, originality, and scholarly content of the study. The use of AI was restricted to language editing and writing support and did not influence the study's results, interpretations, or recommendations.

Findings and Discussion

This section presents the findings of the study derived from the analysis of data gathered through semi-structured interviews, classroom observations, and document analysis. The findings are organized according to the major themes that emerged from the experiences and perceptions of the teacher and student participants regarding the implementation of Math 360 Vertical Learning in a fourth-grade inclusive classroom at Vail Pittman Elementary School. These themes reflect how the instructional approach influenced teaching practices, student engagement, mathematical understanding, and support for diverse learners, including students with disabilities. Direct quotations from participants are included to provide evidence and support for each identified theme. The presentation of findings aims to provide a clear and comprehensive understanding of the participants' experiences within the context of the Math 360 Vertical Learning implementation.

Table 1. Emergent Codes and Themes from Participant Verbatims

Initial Codes	Sub-Themes	Emerging Themes
Ability grouping, differentiated instruction, targeted teaching	Personalized instruction; Level-based grouping	**Differentiated and Data-Driven Instructional Practices**
Use of data, diagnostic assessment, and monitoring progress	Data-informed teaching decisions	
active participation, peer learning, collaboration	Collaborative learning: engagement through grouping	**Enhanced Student Engagement and Participation**
confidence building, appropriate difficulty, motivation	Increased motivation; confidence in learning	
guided learning, scaffolding, conceptual understanding	Scaffolded learning support	**Improved Mathematical Understanding through Scaffolded Learning**
improved comprehension, practice-based learning, clarity	Skill development through practice	
accommodation, inclusion, differentiated tasks	Inclusive instruction; individualized support	**Equitable Support for Diverse Learners in an Inclusive Classroom**
participation, accessibility, inclusion	Participation of struggling learners	

Theme 1. Differentiated and Data-Driven Instructional Practices

This theme highlights that Math 360 Vertical learning promotes differentiated and data-driven instructional practices in the classroom setup. In this approach, instruction was adjusted to meet students' learning needs and levels. Based on the performance data, teachers describe it as evident and informative.

The teacher stated, *"I group students based on their needs and level so we can focus on what they really need."* This demonstrates that teachers used flexible grouping to address diverse learners and their needs. Participant added, *"The data helps me know which skills my students are struggling with."* This verbatim shows how assessment data is used to guide the teacher in their teaching delivery while identifying learning gaps.

According to Carol Ann Tomlinson and Marcia B. Imbeau (2023), differentiated instruction can be effective when certain aspects are met. When teachers continue to assess the students' readiness and needs, they can adjust their approaches and maximize learning opportunities for all students. As described by the participants, flexible grouping is a crucial factor in differentiated instruction and learning since it allows teachers to provide targeted activities to parallel students' current skills and competencies in the subject. Moreover, the participants' emphasis on utilizing assessment data to identify learning gaps among learners is supported by the findings on data-driven decision-making in the field of education. The systematic and appropriate use of student performance data helps educators to make decisions in the delivery of learning accordingly. Furthermore, it allows teachers to monitor students' progress and address learning gaps effectively (Victoria L. Bernhardt, 2018). Relatively, data-informed practices contribute to improving student achievement since teachers can employ strategies and activities that are relevant to the students' needs (Datnow & Park, 2019).

In the context of mathematics education, differentiated and data-driven instruction is effective because learning the subject is based on the students' readiness and their background understanding of the concepts. Using assessment data in instructional decisions allows students to have equal opportunities and fosters their mathematical competency (National Council of Teachers of Mathematics, 2023). Thus, teachers' experiences implementing Math 360 Vertical Learning show how differentiated instruction and assessment can create a learning environment in which students have equal opportunities to learn and improve their mathematical skills. These findings indicate that instruction under Math 360 is highly responsive, structured, and informed by continuous assessment of student progress.

Theme 2: Enhanced Student Engagement and Participation

This theme suggests that Math 360 Vertical learning increases student engagement and participation when teachers align performance tasks and other activities with students' abilities and needs. The teacher participant noted that when he implements flexible grouping based on students' readiness and ability levels, students are more engaged and confident, especially when the tasks are particularly challenging. These observations emphasize that when students experience meaningful participation and collaboration in the learning activities, engagement is strengthened.

The participant shared, *"My students are more active during Math 360 because they work with peers at their level."* This verbatim reflects on how teachers practice structured and flexible grouping. As observed, this manner encourages collaboration and active participation. Moreover, another teacher noted, "They *seem more confident when the tasks are not too hard or too easy."* This suggests that when teachers employ appropriate activities and tasks to meet the diverse learners' needs, it improves motivation and reduces anxiety.

This finding is supported by the principles of differentiated instruction. It emphasizes that when learning experiences are matched to students' readiness and background, active engagement is fostered. Students tend to participate more when the activities and tasks prepared by the teachers are aligned with their current level of understanding (Carol Ann Tomlinson and Marcia B. Imbeau, 2023). Regardless of whether the learning activities are too difficult or too easy, students experience a maximum level of challenge that sustains their motivation and fosters persistence.

The teacher participant's observations about the confidence and encouragement built by students also align with the concept of self-efficacy. Albert Bandura (1997) posited that students' beliefs in their capabilities are enhanced by successful learning experiences, which influence their motivation and engagement.

Research findings indicate that students who perceive themselves as capable learners tend to participate in classroom discussions, collaborate with peers, and persevere through challenging tasks (Schunk & DiBenedetto, 2020). In addition, working together in a group is corroborated by the social constructivist perspectives. Collaboration and cooperation among peers have a positive influence on student engagement. When they are given the chance to work with others, they interact and contribute meaningfully to achieve learning goals (John Hattie, 2023). Moreover, when learning activities are given to students who have the same level of ability, they tend to reduce feelings of intimidation and foster encouragement instead to participate in mathematical performance tasks, including problem solving.

Recent studies in mathematics education also recommend that when instruction is responsive to the needs of the learners, engagement increases. According to the report of the Organization for Economic Co-operation and Development (2023), students show higher levels of academic engagement when they see learning tasks as attainable and relevant to their skills. Similarly, greater participation, confidence, and positive attitude toward the subject can be achieved when the mathematics classroom provides differentiated learning tasks.

Overall, the findings indicate that Math 360 Vertical Learning fosters confidence and engagement since teachers create opportunities and learning experiences that are vertical to the learners' needs. These learning tasks are relevant, challenging, collaborative, and supportive. Thus, students are more likely to participate actively and confidently when instruction is tailored to their readiness levels, enabling them to experience success and develop a stronger sense of competence in mathematics.

Theme 3. Improved Mathematical Understanding through Scaffolded Learning

The third theme reflects how scaffolded instruction plays a crucial role in improving the mathematical understanding among students. Participants confirmed in their verbatims how they received gradual guidance and iterative drills allowed them to understand mathematical concepts more effectively. One student shared, *"I understand math better. We follow the steps," while another added, "Before, I was confused, but now I can solve problems because we practice more."* These responses reflect how students receive structured instructional guidance. This helps them to overcome difficulties and eventually develop a deeper understanding of mathematical concepts. Van de Po et al. (2010) emphasized that when teachers provide guidance and support to the learners with temporary assistance, it enables them to perform beyond their current competence level. This mechanism allows them to foster academic growth and self-efficacy. Thus, scaffolding practices by teachers make students more capable of engaging in complex mathematical competencies.

Research confirms that students' confidence and problem-solving skills are developed when teachers employ scaffolding in their instructional delivery. The teacher participant indicated that iterative practice unlocks confusion in successful problem-solving tasks. This suggests that learning barriers can be reduced through instructional support. This observation aligns with the work of Van de Pol et al. (2010), who emphasized that scaffolding can be effective when it involves supporting students' needs and when responsibility is transferred to the learners. Students connect prior learning more effectively to new mathematical concepts when they receive appropriate pedagogical support. Scaffolding is meant to guide and support learners. When the time comes that they may no longer need assistance, they tend to self-regulate while maintaining a robust foundation in mathematical concepts. Consequently, aside from the fact that it facilitates understanding, it also nurtures their confidence in mathematics.

Moreover, the participants' experiences do not only describe how the scaffolding practice is made by the teacher but also underscore the significance of giving feedback and structured practices as an important part of scaffolded learning. Their experiences suggest that they can recognize their mistakes, refine their pedagogical and instructional strategies, and enhance their performance as teachers when there is consistent feedback. Feedback, as an essential element, is among those influential factors affecting students' achievement. Through this, it allows students to understand their progress and areas for improvement (Hattie and Timperley, 2007). It supports students in

monitoring their own learning and developing self-efficacy when scaffolded instruction is integrated. In mathematics education, instructional practices among teachers allow students to understand both conceptual and procedural fluency, making them perform tasks in mathematics with greater competence and independence.

Overall, the findings indicate that scaffolded instruction, reinforced by meaningful feedback and repeated practice, is instrumental in promoting students' mathematical understanding and problem-solving skills.

Theme 4. Equitable Support for Diverse Learners in an Inclusive Classroom

This theme emphasizes that Math 360 promotes an inclusive learning environment where all students, regardless of their background, are given equal opportunities to engage and achieve learning. Based on the implementation of Math 360, the teacher participant reported that he adjusted pedagogical and instructional strategies according to the learners' needs. This includes students with individualized Education Programs (IEPs). One teacher said, *"My students with IEPs can participate because tasks are adjusted."* He added, *"Even students who struggle can still join and contribute to their group."* These statements mean that inclusive practices promote equal participation and reduce learning barriers.

Recent research corroborated that learners' potential can be maximized and barriers to learning can be reduced in an Inclusive mathematics classroom since it provides flexible and collaborative learning (Xenofontos et al., 2024). Teachers' experiences also show the importance of strategic and differentiated instruction. Through this, learners' different abilities are catered to and maximized. The learning success of the learners in Math 360 and their engagement in meaningful mathematical activities are evident when responsive multiple entry points are adapted and provided by teachers. By employing differentiated instruction, students' participation in an inclusive classroom is enhanced. Their learning growth is guided and supported within general education settings (Aribbay et al., 2024; Gardesten, 2023).

In addition, pedagogical and instructional practices in an inclusive setting allow students to access and discover mathematical concepts at different levels while they maintain sharing their goals. Thus, it makes them feel that they belong and are competent among all learners (Prediger & Buró, 2024).

Moreover, collaborative learning has a significant role in supporting diverse learners. Collaborative learning has an advantage; there are inevitably learning difficulties encountered during group discussion and activities, as per teachers' observation. Despite this instance, this is an opportunity for students to learn by interacting with others, and for teachers to provide responsive and relevant activities. This suggests that Math 360 promotes peer interaction and group problem-solving, which are essential components of inclusive mathematics education. Research shows that participation in group work in mathematical activities and discussions is fostered. With this, students with special needs develop communication skills, confidence, and mathematical understanding through peer interactions (Kusumawati et al., 2024).

Moreover, Mathematics in inclusive classrooms that value interdependence and shared common learning goals helps address deficit perspectives and recognize varied forms of competencies in mathematics among learners (Healy et al., 2024).

Math 360 Vertical Learning appears to not only enhance mathematical learning but also to support active participation and engagement. By adjusting tasks, encouraging group work, and ensuring that everyone can participate, Math 360 supports inclusive education by helping all students learn and take part in classroom activities, regardless of their learning needs. Studies show that inclusive instruction is found to be effective when teachers create and design learning activities that accommodate their individual needs while maintaining objectivity in the learning goals (Anderson et al., 2024; Tran & Castro Schepers, 2023). Thus, findings highlighted that teachers' preparation and designing strategies to address individual learning abilities among learners in an inclusive education classroom not only strengthen mathematical understanding but also foster fairness and equal opportunities.

Conclusion

The findings of the study revealed that Math 360 Vertical learning is an effective pedagogical and instructional strategy that enhances competencies toward achieving learning outcomes in mathematics through differentiated and data-driven instruction, increased student engagement, and scaffolded learning delivery. By objectively assessing students' performance data, teachers are guided in their instructional decisions, enabling them to address diverse learning abilities and needs through targeted support and create meaningful learning opportunities. The implementation of collaborative work, appropriate and responsive tasks, and flexible learning activities fosters active participation, builds confidence, and increases students' understanding of mathematical concepts. In addition, students' conceptual and procedural mathematical skills in analyzing problems are developed when teachers provide guidance, drills, and constructive feedback. The findings also highlight the importance of inclusive teaching practices. Teachers' flexibility and wise decision-making on the employment of appropriate learning tasks delivered an effective way for diverse learners to learn, including those with disabilities. These findings imply that mathematics teachers should continue adopting learner-centered, data-informed, and inclusive pedagogical and instructional strategies, while school leaders should provide support for teachers for professional development and instructional support to strengthen the effective implementation of Math 360 Vertical Learning. Thus, the study suggests that Math 360 not only improves students' mathematical competence but also fosters fairness and equal opportunities among students by creating an environment that responds to their needs and nurtures equity toward achieving a common goal: meaningful learning.

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