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TEACHING COMPETENCIES OF MATHEMATICS TEACHERS: BASIS FOR A PROPOSED CAPABILITY DEVELOPMENT PLAN

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Abstract

This study aimed to investigate the current state of teaching competencies among elementary mathematics teachers in to propose a capability development plan based on the findings. Findings revealed that the level of teaching competencies among elementary mathematics teachers is generally positive, with strengths observed in promoting self-regulation, and encouraging a growth mindset while development to areas on modeling behavior, encouraging observational learning, and facilitating self-efficacy are recommended. The very satisfactory academic performance of the learners in mathematics indicates a strong student achievement through high grades, successful task completion, and strong standardized test scores, demonstrating a robust grasp of key concepts, consistent improvement, and effective teaching strategies.

Moreover, the significant relationship between the variables reinforces the critical role of teacher quality in student learning outcomes while all aspects of teacher competency are important, the stronger correlations for self-efficacy, self-regulation, and growth mindset highlight the significance of these areas for improving student achievement. A well-designed and implemented teacher capability development plan is essential for improving the quality of education, enhancing student learning outcomes, and ensuring that teachers are equipped to meet the challenges of the twenty-first century.

Recommendations include a need for need for the school administrators to prioritize professional development among the elementary mathematics teachers addressing weak areas including workshop on effective demonstration techniques, peer observation, and the use of technology to facilitate observational learning, and by implementing the proposed capability development plan for mathematics teachers, schools can leverage the strong link between teacher competencies and student achievement to significantly improve mathematics education outcomes for all students.

***Keywords**: level of teaching competencies, mathematics teachers, capability development plan*

Introduction

Mathematics education plays a crucial role in shaping students' cognitive development and future academic success. Effective mathematics teaching requires a combination of pedagogical skills, subject matter knowledge, and a deep understanding of student learning. Elementary mathematics teachers, as the foundation for students' mathematical journey, must possess a strong set of

competencies to facilitate meaningful learning experiences.

These competencies encompass a wide range of skills, including effective instructional strategies, content knowledge, assessment practices, and the ability to create a positive and inclusive learning environment. By developing

these competencies, elementary mathematics teachers can significantly impact their students' mathematical achievement and foster a lifelong appreciation for the subject.

While extensive research has been conducted on various aspects of mathematics teaching and learning, there remains a gap in the literature regarding the specific competencies required for effective elementary mathematics instruction. This study aims to address this gap by investigating the essential competencies that elementary mathematics teachers need to possess to support their students' mathematical development.

Methodology

This study used the descriptive quantitative research design which is appropriate to the aims of the study. Descriptive research is a type of research that aims to describe characteristics, frequencies, and relationships of a population or phenomenon. It is often used to answer questions about what, when, where, and how but not why. This type of research involves observing and collecting data without manipulating variables, providing detailed and accurate picture of the phenomenon being studied. While it cannot establish a cause-and-effect relationship, this research is valuable for gathering information and understanding the characteristics of a population or phenomenon (Creswell, 2023).

Results

The findings imply improving student learning outcomes by improving teacher competencies. Effective teaching can help to reduce the achievement gaps between different student groups. All students, regardless of their background or socioeconomic status, deserve access to high-quality mathematics instruction. A strong foundation in mathematics is crucial for success in many other subjects and in life.

These findings are aligned with Goleman (2021) who mentioned that consistent positive reinforcement can be a powerful tool for managing classroom behavior. Teachers should reward positive behaviors and provide specific praise to encourage students to continue acting appropriately. Teaching students problem-solving skills can help them resolve conflicts peacefully and manage their own behavior effectively.

Discussion

Robust PCK enables teachers to create a dynamic and supportive classroom environment. By understanding how students learn mathematics, teachers can design lessons that encourage active participation, critical thinking, and problem-solving. They can also effectively utilize assessment data to inform their instruction, providing targeted feedback and adjusting their teaching strategies to address individual student needs. This leads to increased student engagement, confidence, and a more positive attitude towards mathematics, reducing math anxiety and fostering a lifelong appreciation for the subject.

Ultimately, investing in the development of mathematics teachers' PCK translates to improved student outcomes. When teachers possess a deep understanding of both the content and how to teach it effectively, they are better equipped to guide students towards mathematical proficiency. This not only benefits individual students but also contributes to a stronger foundation for future academic and professional success in a world increasingly reliant on mathematical literacy.

Conclusion

By engaging in the proposed capability development plan, teachers can enhance their understanding of key educational concepts and

develop the necessary skills and knowledge to create effective and engaging learning experiences for their students.

Recommendations

The following are the recommendations borne out of the findings of the study.

1. There is a need for the school administrators to prioritize professional development among the elementary mathematics teachers addressing weak areas including workshop on effective demonstration techniques, peer observation, and the use of technology to facilitate observational learning.

2. School administrators may use student performance data to identify areas for improvement in teaching practices and tailor professional development accordingly.

3. Mathematics teachers may create a culture of continuous learning encouraging them to engage in ongoing professional development activities, such as attending workshops, participating in online courses, and collaborating with colleagues.

4. By implementing the proposed capability development plan for mathematics teachers, schools can leverage the strong link between teacher competencies and student achievement to significantly improve mathematics education outcomes for all students.

Keywords: *level of teaching competencies, mathematics teachers, capability development plan*

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