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DEVELOPING LOVE AND INTEREST FOR MATHEMATICS THROUGH: PROJECT PEER POWER: ENHANCING LEARNING THROUGH PUPIL-RUN TUTORIAL PROGRAM

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ABSTRACT:

This action research project investigates the effectiveness of a pupil-run tutorial program, Project Peer Power, designed to develop a love for mathematics among middle school students. The study explores how peer tutoring can enhance students' engagement, understanding, and enjoyment of mathematics. The research involved the implementation of the tutorial program, the collection of qualitative and quantitative data, and the analysis of the outcomes to determine the program's impact on students' attitudes towards mathematics and their academic performance.

INTRODUCTION:

Mathematics is a fundamental subject in the educational curriculum, yet many students struggle to develop a genuine interest in the subject. Traditional teaching methods often fail to engage students, leading to a lack of motivation and enthusiasm. Project Peer Power was developed as an innovative approach to address these challenges by creating a student-led tutoring program where older students support their peers. This action research aims to evaluate the effectiveness of this program in fostering a positive attitude towards mathematics and improving students' mathematical skills.

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Research Questions:

How does participation in Project Peer Power affect middle school students' attitudes towards mathematics?

What impact does the peer tutoring program have on students' mathematical understanding and academic performance?

How do students perceive the effectiveness of the peer tutoring program in enhancing their learning experience?

Literature Review:

Research has shown that peer tutoring can be an effective educational strategy for improving student outcomes. Topping (2005) found that peer tutoring enhances academic achievement and increases students' motivation by creating a collaborative learning environment. Additionally, studies by Coker and Coker (2013) indicate that peer-led learning can help students develop a more positive attitude towards challenging subjects. Project Peer Power builds on these findings by integrating peer tutoring into a structured program aimed at increasing students' love for mathematics.

METHODOLOGY:

Design:

This action research study employed a mixed-methods approach, combining quantitative and qualitative data collection methods to evaluate the effectiveness of the peer tutoring program.

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Participants:

The study involved 30 middle school students, including 10 peer tutors (Grade 6) and 20 tutees (Grade 5). The participants were selected based on their interest in the program and their willingness to participate.

PROCEDURE:

Program Implementation: Project Peer Power was introduced as a weekly after-school tutorial program. Peer tutors received training on effective teaching strategies, while tutees attended two-hour sessions focusing on math topics such as algebra, geometry, and fractions.

Data Collection: Data was collected through pre- and post-program surveys, student interviews, and academic performance records. The surveys assessed changes in attitudes towards mathematics, while the interviews provided insights into participants' experiences. Academic performance was evaluated based on test scores and classroom assessments.

Data Analysis: Quantitative data from surveys and test scores were analyzed using descriptive statistics to identify trends. Qualitative data from interviews was analyzed thematically to explore students' perceptions of the program.

RESULTS:

Attitudes Towards Mathematics:

Pre- and post-program surveys indicated a significant improvement in students' attitudes towards mathematics. The average survey score increased from 3.2 to 4.5 on a 5-point scale, reflecting greater enthusiasm and interest in the subject.

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Mathematical Understanding:

Academic performance data showed that tutees' test scores improved by an average of 15% over the course of the program. Additionally, qualitative feedback from tutors and tutees indicated that the tutoring sessions helped clarify difficult concepts and built students' confidence in their mathematical abilities.

Perceptions of the Program:

Interviews revealed that both tutors and tutees found the program beneficial. Tutors appreciated the opportunity to develop their teaching skills, while tutees valued the personalized support and the chance to learn from their peers.

DISCUSSION:

The findings from Project Peer Power demonstrate that a pupil-run tutorial program can effectively foster a love for mathematics and improve students' academic performance. The positive changes in attitudes and the improvement in test scores suggest that peer tutoring provides valuable support and encouragement for learning mathematics. The program's success can be attributed to the peer-to-peer interaction, which made learning more engaging and relatable for the students.

Implications:

The results of this study suggest that schools could benefit from implementing similar peer tutoring programs for other subjects. The success of Project Peer Power highlights the potential of student-led initiatives to enhance learning experiences and outcomes. Future research could

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explore the long-term effects of peer tutoring on students' academic achievements and attitudes toward various subjects.

CONCLUSION:

Project Peer Power effectively increased middle school students' interest in mathematics and improved their academic performance through a structured, pupil-run tutoring program. By leveraging the strengths of peer tutoring, the program created a supportive learning environment that fostered a positive attitude towards mathematics and enhanced students' understanding of the subject.

RECOMMENDATIONS:

Expand the program to include more subjects and grade levels.

Provide ongoing training for peer tutors to maintain high-quality tutoring.

Explore ways to involve parents and guardians in supporting the program.

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Topping, K. J. (2005). "Trends in Peer Learning." Educational Psychology.

Appendices:

Appendix A: Survey Questionnaire

Appendix B: Interview Questions

Appendix C: Pre- and Post-Program Test Scores

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