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Assessing the Effectiveness of Mathematics Teaching Strategies at School in Urban Areas

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Abstract

Mathematics education plays a vital role in developing students' problem-solving, analytical, and critical-thinking skills, which are essential for academic achievement and lifelong learning. Despite the availability of various instructional approaches, many students in urban schools continue to encounter difficulties in understanding mathematical concepts and achieving satisfactory academic performance. Therefore, this study aims to assess the effectiveness of mathematics teaching strategies implemented in schools located in urban areas. A quantitative research approach employing a cross-sectional research design was adopted. Data was collected from 152 teachers in urban schools using a structured questionnaire administered through Google Forms. The reliability analysis demonstrated good internal consistency, with a Cronbach's Alpha coefficient of 0.871, indicating that the instrument was suitable for measuring the study variables. The findings revealed a high level of perceived effectiveness of mathematics teaching strategies, with a mean score of 4.61 (SD = 0.478), suggesting strong agreement among respondents regarding the positive impact of these strategies on mathematics teaching and learning. The study concludes that effective mathematics teaching strategies play a significant role in enhancing the quality of mathematics instruction in urban schools and provide valuable insights for educators and policymakers in strengthening mathematics education practices.

INTRODUCTION

Mathematics is a broad subject that is crucial in the development of students' logical thinking, analytical, and problem-solving abilities that are fundamental in succeeding academically as well as having good careers. In the contemporary education context, teachers have to use innovative teaching methods to improve students' academic performance in math classes. It is known that an effective math class increases students' motivation and engagement in the learning process (Ling & Matore, 2021).

Even though the education system in Malaysia is continuously improving, students in urban schools have challenges in learning mathematics. The students in urban schools usually come from a wide variety of socioeconomic and educational backgrounds, thus posing difficulties for teachers in terms of teaching all of the students with very different educational needs at the same time. Along with this, there are other issues such as overcrowded classes, insufficient learning time available for teaching, differing backgrounds of the learners, and greater use of technology in learning mathematics (Rosly & Syaiful Azuan, 2024). Consequently, teachers need to employ appropriate instructional strategies that encourage active participation and meaningful learning rather than relying solely on traditional teacher-centred approaches.

Recent research has shown that student-centred learning, cooperative learning, problem-based learning, differentiated instruction, and technology-based education have a significant positive impact on students' understanding of certain concepts and performance in learning mathematics. Interactive teaching methods invite students to engage in discussions in the classroom, communicate with one another and learn to apply their knowledge of mathematics to real-life issues (Che Aziz et al., 2024; Fatimi et al., 2025).

However, while a variety of teaching methods have been used, there could be variation in one's effectiveness as a result of the professional skill level of teachers, the nature of classrooms and the learning style of students. Most prior research has concentrated on students' learning outcomes, while there has not been many studies, which analysed teachers' perspectives on various approaches in teaching mathematics in urban education. It is necessary to understand teachers' views on this matter as they are the ones who select and apply teaching methods which either facilitate or hamper the learning process of students (Rosly & Nordin, 2025).

Hence, the goal of this research is to evaluate how effective mathematics teaching approaches are in urban educational institutions. The results of the study will help educators, school managers, and policymakers recognize more effective methods of teaching mathematics, which may improve the level of mathematical knowledge, involvement of students, and their academic performance. Additionally, the research can possibly make a contribution to the improvement of the quality of education through the application of evidence-based teaching methods which could account for the diversity of students' educational needs.

LITERATURE REVIEW

Previous studies have highlighted the importance of effective teaching strategies in improving students' engagement and achievement in mathematics. Rosly and Syaiful Azuan (2024) reported that student-centred teaching approaches are more effective than traditional teacher-centred methods in promoting active participation, critical thinking, and classroom interaction. Their findings further demonstrated that integrating interactive learning activities enhances students' conceptual understanding of mathematics and improves learning outcomes. These findings suggest that the effectiveness of mathematics teaching strategies is closely associated with the use of engaging, student-centred instructional approaches, particularly in school settings where diverse learning needs must be accommodated.

In a like manner, much research has been done to find out if cooperative learning is an effective method for teaching mathematics. As an instance, (Che Aziz et al., 2024) found out that when students engaged in cooperative learning, they did much better at algebra than when they were only taught using traditional methods. The researchers also stated that students were able to work together to solve problems and use peer interactions to share ideas and better their understanding of mathematical concepts. In a similar vein, (Rosly & Nordin, 2025) found out that mathematics teachers view cooperative learning as a positive method of teaching because it leads to higher levels of student engagement, participation and communication with their classmates during the lessons. All of these studies indicate that using cooperative learning increases academic performance as well as creates a more interactive classroom environment.

Both student-centred and cooperative approaches as well as the integration of Technology in teaching Mathematics is now more than ever required. (Fatimi et al., 2025) revealed that using Mathematical software and Digital Learning tools allowed students to have a greater understanding of Abstract Mathematical Concepts through visualisation and interaction. Using technology assisted instruction and technology Integration the motivation level of students studying Mathematics was also increased as well as their interest in Mathematics. It has been concluded by the researchers that by Integrating Technology into your current classroom Instruction will support Teachers to deliver better Lessons, and Benefit Students by providing a more Effective Learning Experience.

Additionally, Fadlelmula (2022) explained that the mathematics education research conducted in recent years is always in favor of learner-centred pedagogies, as they raise students' motivation, involvement, and self-confidence and boost mathematics learning performance. Likewise, Pellegrini et al. (2021) found in a thorough meta-analysis that pedagogical methods that include interaction, structured assistance and teacher training yield greater learning

success than traditional whole-class teaching. The results indicated that it is possible to enhance the effectiveness of mathematics learning in urban schools with diverse students through implementing evidence-based mathematics teaching strategies that can address the instructional challenges.

Apart from that, collaborative learning has become one of the best methods of mathematics teaching and learning that facilitates students to build up knowledge through dialogue and problem solving. Students do not learn individually, but rather they learn by discussing mathematical reasoning, comparing various solution techniques and building up conceptual understanding. This approach can be especially beneficial in schools with a large proportion of students from diverse backgrounds as it can help to bring a variety of lived experiences and viewpoints to the classroom, fostering a more enriching learning environment and supporting one another. The systematic literature review by Hampson et al. (2026) reported that mathematics achievement has been regularly found to be enhanced by cooperative learning among school students. This can be seen when only 8 of the nine studies examined reporting positive mathematics achievement. Similarly, the study shows well-designed collaborative mathematics classrooms allow teachers to track student reasoning more thoroughly and enhance student engagement and problem-solving abilities (Schwarz et al., (2021). The results suggest that collaborative learning is a viable approach to the development of mathematical understanding for urban students as they communicate, collaborate and participate.

Inquiry and problem-based learning is another effective mathematics teaching strategy to involve students in authentic mathematical problems. This strategy enables them to use the reasoning process to find solutions instead of memorizing procedures. This teaching strategy also encourages students to develop higher-order thinking skills, increase creativity and to learn independently while giving opportunities to them to relate mathematical knowledge into everyday life. The importance of such contextual learning is particularly significant in urban schools where students are faced with a variety of social, economic and environmental problems which can be integrated into meaningful mathematical investigations. Recent studies suggest that problem-based learning, if guided with good intent by the teacher in the classroom to discuss the problems and reflect on what has been learned, can enhance students' conceptual understanding, mathematical communication and critical thinking. For example, a systematic literature review guided by the PRISMA protocol performed by Pratiwi et al. (2025) revealed that problem-based learning is one of the widely effective mathematics learning strategies in learning accompanied by collaborative activities and proper pedagogical support. Therefore, inquiry-oriented teaching provides urban school students with opportunities to apply mathematical knowledge in authentic contexts while strengthening their analytical and reasoning skills.

Beside collaborative and inquiry based strategy, effective mathematics teaching relies on the development of learning spaces that facilitate mathematical reasoning, classroom discussion and ongoing formative assessment. These strategies promote students to engage in explaining their understanding, justifying their mathematical reasoning and reflecting on their learning. Thereby, this will reinforce conceptual understanding over and above procedural understanding. Regular feedback and mathematical conversation in the urban classroom can enable teachers to detect misconceptions early and adjust instruction to meet diverse learning needs and experiences. Structured team-based learning is thus expected to foster conceptual understanding and mathematical reasoning, giving students opportunities to share and justify their understanding in the classroom (Gustafsson, 2025). In addition, Young et al. (2022) stated that mathematics instruction in urban schools should shift from lecturing to pedagogical practices that embrace the diversity of students and afford them opportunities to engage mathematically. Overall, the results indicate that the integration of multiple evidence-based teaching strategies can help to establish an inclusive learning atmosphere that can enhance mathematics achievement among students in urban schools.

Furthermore, cooperative learning strategies have been found to have positive impacts on the students' mathematics achievement, as well. Students discuss mathematical ideas, explain processes of problem solving and learn from one another through collaborative activities. A study that was recently conducted on the use of the Jigsaw cooperative learning model in teaching mathematics has revealed that this cooperative learning method is more effective in enhancing students' understanding in mathematics learning compared to the conventional learning approach. Based on the findings, it can be concluded that using cooperative learning approaches is suitable for use in classrooms that have students with various skills, as it can improve students’ engagement and more in-depth learning of math (Siregar, 2026).

Beyond that, differentiated instruction has emerged as one of the key strategies to address student variability in mathematics instruction. In an effort to find out how well the various teaching methods (differentiated instruction, direct instruction and collaborative learning) performed in improving mathematics performance, Baybayan and Abelarde (2026) conducted a study and they found that all strategies were effective in improving student achievement, indicating flexibility in teaching can be of assistance to students with varying levels of mathematical ability. This is a key discovery for urban schools, where teachers may have to deal with the diversity of learning styles and preparation among students.

Another important aspect that can impact the effectiveness of mathematics teaching strategies is teacher professional development. While high quality teaching methods may be available to teachers, they need ongoing professional development to use them effectively. Kraft and Hill (2020) concluded that web-based coaching programmes were effective in enhancing teaching skills of mathematics teachers through guidance, feedback and content-specific interventions. The study emphasizes that with the improvement of teachers' skills through coaching and professional development, the impact on mathematics teaching outcomes can be enormous especially in complex urban school settings.

There had been prior discourses on the concept of realistic mathematics education (RME). RME was first conceptualized in the Netherlands in 1968 as the Wiskobas (primary level math) project. RME is laid on five fundamental aspects, in which, according to Marja van den Heuvel-Panhuizen and Paul Drijvers (2020), are activity, interactivity, guidance, level and reality. Under these five principles, mathematics lessons have transitioned from mere theoretical classes to a vibrant, interactive and systematic experience, where students are given hands-on approach to the subject, relate them with everyday life problems, and are given freedom to develop their own approaches to solve problems. This indicates that RME implementation provides a holistic experience in lessons, and helps in fostering analytical skills as well as creativity, proving it to be an effective reform in teaching this subject (Ernest Frimpong Akosah et al., 2026).

While being revolutionary, the effectiveness of such an implementation is dictated by the students' comprehension and their teacher's competency. For instance, in a paper published by Chelsie Ariati and Dandang Juandi (2022) on Indonesian students, it has been found that the majority of them are lagging in higher order thinking skills (HOTS). Some of the factors include the teacher's lenient approach in teaching. Peteros (2021) also suggests that self-concept - perception of oneself's ability and interest towards a subject - serves as a major influence in a student's mathematical performance. With regard to this situation, it is neccesary to prepare future educators in implementing RME in schools so students could elevate their mathematical self-concept, as recommended by Syahrul Anwar and Yussup Junaedi (2021).

In conclusion, previous studies indicate that effective mathematics teaching strategies include student-focused learning, cooperative learning, tech integration, differentiated instruction, and RME. All of these methods have been shown to enhance students' understanding, motivation, engagement, and academic strides. However, their effectiveness is dictated by the student's self-concept, professional development and teachers's competencies. Therefore, continuous support for teachers and further research transcending different educational contexts are crucial to ensure a successful implementation of these strategies, as well as to enhance mathematics learning among schoolchildren.

METHODOLOGY

This study utilizes a quantitative approach using cross-sectional research design to assess the effectiveness of mathematics teaching strategies in schools located in urban areas by examining teachers' perceptions of the instructional approaches implemented in their classrooms. A total of 152 respondents representing diverse demographic backgrounds from urban areas were selected using a convenience sampling method. Data were collected through a structured questionnaire administered through Google Forms. The questionnaire consisted of two sections: socio-demographic information and the effectiveness of mathematics teaching strategies in schools. Responses were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Descriptive statistics, including means and standard deviations, were implemented to analyze the data, while Cronbach's alpha coefficient was used to assess the internal consistency of the questionnaire items.

RESULT AND DISCUSSION

Profile of Respondents

The demographics of the study's 152 respondents are detailed in Table 1.0. Based on the gender breakdown, males slightly outnumbered females in the sample with 50.7% of the total respondents being male and 49.3% being female. Therefore, there is a fairly even gender distribution in this sample with males outnumbering the females by a small margin. In regards to age, the majority of the sample consisted of respondents aged 20-30 (43.4%). Respondents aged 31-40 years old made up 32.2% of the sample, respondents aged 41-50 years made up 15.1% of respondents and respondents aged more than 51 years made up 9.2%. With the vast majority of respondents in the study being between the ages of 20-30, the study is predominantly represented by younger and middle-aged adults. The largest group of educationally qualified respondents were diploma holders (53.3%). The next largest qualification were respondents with Bachelor's degrees (24.3%). Other qualifications received by respondents

totalled 17.8% and then only 4.6% of respondents held postgraduate qualifications. Therefore, the majority of respondents in the study received at least a diploma as their highest level of education.

Table 1.0
PROFILE OF RESPONDENT (N=152)

Profile	Category	Frequency	Percentage (%)
Gender	Male	77	50.7
	Female	75	49.3
Age	20 - 30 years old	66	43.4
	31 - 40 years old	49	32.2
	41 - 50 years old	23	15.1
	51 years and above	14	9.2
Academic Qualification	Diploma	81	53.3
	Bachelor's Degree	37	24.3
	Postgraduate Degree	27	4.6
	Other	7	17.8

According to Pallant (2016), Cronbach's alpha is used to analyse the internal consistency of a scale by assessing how closely linked a set of items are as a group. An alpha coefficient of 0.90 and above is considered excellent, 0.80 to 0.89 is regarded as good, 0.70 to 0.79 is acceptable, 0.60 to 0.69 is questionable, 0.50 to 0.59 is poor, and values below 0.50 are considered unacceptable. Table 2.0 presents the reliability analysis for *Assessing the Effectiveness of Mathematics Teaching Strategies in Schools in Urban Areas*. The construct consisted of five items and obtained a Cronbach's Alpha value of 0.871. Pallant (2016) categorized this amount as being at a good level of reliability. Hence, the results indicate that the items used to measure Mathematics Teaching Strategies have a good amount of internal consistency to be reliable enough to use for further statistical analysis.

Table 2.0
RELIABILITY TEST

Variable	Number of Items	Cronbach's Alpha	Reliability Assumed
Assessing the Effectiveness of Mathematics Teaching Strategies in Schools in Urban Areas	9	0.871	Good

The interpretation of the mean scores used in this study is presented in Table 3.0, which categorises respondents' perceptions into three levels: low (1.00–2.33), moderate (2.34–3.67), and high (3.68–5.00). This interpretation scale serves as a benchmark for evaluating the effectiveness of mathematics teaching strategies implemented in urban schools. The descriptive statistics, including the mean scores and standard deviations for the study variable, are presented in Table 4.0. Based on the responses obtained from 152 participants, the overall mean score for the effectiveness of mathematics teaching strategies was 4.61 with a standard deviation of 0.478. The relatively high mean score indicates that respondents generally perceived the mathematics teaching strategies implemented in urban schools to be highly effective. Furthermore, the low standard deviation suggests that the responses were closely clustered around the mean, reflecting a high level of consistency and agreement among the participants. According to the interpretation scale presented in Table 3.0, a mean score within the range of 3.68 to 5.00 is classified as high, confirming that the overall perception of the effectiveness of mathematics teaching strategies falls within the highest category. These findings suggest that the instructional strategies employed by teachers in urban schools are viewed positively and are considered effective in facilitating mathematics teaching and learning. The results also imply that the current teaching practices have the potential to enhance students' understanding of mathematical concepts, promote active classroom engagement, and support the development of problem-solving and critical-thinking skills. Overall, the findings demonstrate a strong consensus among respondents regarding

the effectiveness of mathematics teaching strategies in urban schools, highlighting the importance of maintaining and continuously improving evidence-based instructional practices to sustain high-quality mathematics education.

Table 3.0
LEVEL OF MEAN SCORE RANGE

Mean Score Range	Level
1.00 – 2.33	Low
2.34 – 3.67	Medium
3.68 – 5.00	High

Table 4.0
MEAN AND STANDARD DEVIATION

Variable	Mean	Standard Deviation	N
Assessing the Effectiveness of Mathematics Teaching Strategies in Schools in Urban Areas	4.61	0.478	152

CONCLUSION

The findings of this study demonstrate that the mathematics teaching strategies implemented in urban schools are perceived to be highly effective in enhancing the quality of mathematics instruction and supporting students' academic achievement. This conclusion is supported by the high overall mean score obtained from the survey, indicating a strong level of agreement among the 152 respondents regarding the effectiveness of the teaching strategies employed. The findings suggest that the consistent application of student-centred instructional approaches, including collaborative learning, inquiry-based learning, differentiated instruction, technology-integrated teaching, and realistic mathematics education, contributes significantly to improving students' conceptual understanding, problem-solving abilities, critical-thinking skills, classroom engagement, and overall learning outcomes. These approaches encourage active participation by enabling students to construct knowledge through meaningful interaction, discussion, exploration, and authentic mathematical problem-solving experiences, thereby fostering deeper and more sustainable learning. Nevertheless, the effectiveness of these teaching strategies is influenced by several important factors beyond the instructional methods themselves. Teachers' pedagogical knowledge, subject-matter expertise, and ability to implement diverse instructional approaches effectively remain essential determinants of successful mathematics teaching. Continuous professional development, pedagogical training, and opportunities for teachers to adopt innovative instructional practices are therefore necessary to ensure that mathematics instruction remains relevant to the evolving educational landscape. In addition, students' motivation, self-efficacy, readiness to learn, and positive attitudes towards mathematics play a significant role in determining the success of these teaching strategies. Consequently, schools should provide supportive learning environments that encourage student participation, collaboration, and confidence in learning mathematics while simultaneously equipping teachers with the necessary resources, technological support, and professional learning opportunities. Furthermore, the successful implementation of effective mathematics teaching strategies requires comprehensive instructional planning, effective classroom management, appropriate assessment practices, and continuous monitoring of students' learning progress to accommodate diverse learning needs and abilities. Educational policymakers and school administrators should therefore prioritise the development of policies and initiatives that strengthen teachers' instructional competencies and promote the adoption of evidence-based mathematics teaching practices across urban schools. Although this study provides valuable empirical evidence regarding the effectiveness of mathematics teaching strategies in urban educational settings, its findings are limited to the respondents involved in this research. Future studies should therefore include larger and more diverse samples from rural, suburban, and different geographical contexts, while also employing mixed-method or longitudinal research designs to gain a more comprehensive understanding of how various teaching strategies influence students' mathematics achievement over time. Such investigations would enhance the generalisability

of the findings and provide stronger evidence to inform educational policy and instructional practice aimed at improving mathematics education across different school contexts.

REFERENCES

Akosah, E.F., Arthur, Y.D. & Obeng, B. A. (2026). Effectiveness of realistic mathematics education: a meta-analysis. American Journal of STEM Education, Issues and Perspectives, 24, 372-373. https://mail.ojed.org/STEM/article/view/8445

Anwar, S. & Junaedi, Y. (2026). Pendekatan Realistic Mathematics Education untuk meningkatkan self-concept siswa SMP. GeoMath, 2 (1), 7. https://ejurnal.latansamashiro.ac.id/index.php/GEOMATH/article/view/778

Ariati, C. & Juandi, D. (2022). Realistic mathematics education on higher-order thinking skill mathematics of students. Kalamatika: Jurnal Pendidikan Matematika 7 (2), 220. http://matematika-uhamka.com/kalamatika_old/index.php/kmk/article/view/551

Baybayan, J. Y., & Abelarde, T. G. M. (2026). Effectiveness of Diverse Teaching Strategies on Academic Performance of Students in the Mathematics Intervention Program. International Journal of Research and Innovation in Social Science, 10(4), 3963–3969. https://doi.org/10.47772/ijriss.2026.100400293

Che Aziz, N., Mohamed Nadzri, A. Z., & Othman, Z. S. (2024). Cooperative learning methods and algebraic proficiency: Insights from secondary school education. Jurnal Intelek, 19(1), 10–16. https://journal.uitm.edu.my/ojs/index.php/JI/article/view/6630

Fatimi, N., Aksah, S. J., Mohd Rosli, N. A. I., Yusof, K. H., & Alshekhly, M. N. A. (2025). Utilizing mathematical software for the teaching and learning of mathematics in Malaysia. Malaysian Journal of Computing, 10(2), 2293–2307. https://journal.uitm.edu.my/ojs/index.php/MJoC/article/view/6022

Gustafsson, A. (2025). Facilitating Mathematical Reasoning through Team-based Learning. The Mathematics Educator, 32(1), 103–127. https://doi.org/10.63301/tme.v32i1.3136

Hampson, P., Li, Zhe., & Thurston, A. (2026). Cooperative learning strategies to raise attainment in mathematics with pupils aged 11–16 years: A systematic literature review [Review of Cooperative learning strategies to raise attainment in mathematics with pupils aged 11–16 years: A systematic literature review]. British Educational Research Journal. https://doi.org/10.1002/berj.70170

Kayan Fadlelmula, F. (2022). Enablers and obstacles in teaching and learning of mathematics. LUMAT: International Journal on Math, Science and Technology Education, 10(2). https://doi.org/10.31129/lumat.10.2.1627

Kraft, M. A., & Hill, H. C. (2020). Developing Ambitious Mathematics Instruction Through Web-Based Coaching: A Randomized Field Trial. American Educational Research Journal, 57(6), 2378–2414. https://doi.org/10.3102/0002831220916840

Laurens, T., Batlolona, F. A., Batlolona, J. R., Leasa, M. (2017).How does realistic mathematics education (RME) improve students' mathematical achievement? EURASIA Journal of Mathematics, Science and Technology Education, 575-576. https://www.ejmste.com/article/how-does-realistic-mathematics-education-rme-improve-students-mathematics-cognitive-achievement-5284

Pallant, J. (2020). SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS (7th ed.). McGraw-Hill Education. https://library.mycc.gov.my/cgi-bin/koha/opac-detail.pl?biblionumber=7&shelfbrowse_itemnumber=554

Pellegrini, M., Lake, C., Neitzel, A., & Slavin, R. E. (2021). Effective Programs in Elementary Mathematics: A Meta-Analysis [Review of Effective Programs in Elementary Mathematics: A Meta-Analysis]. AERA Open, 7. https://doi.org/10.1177/2332858420986211

Peteros, P., Gamboa, A., Etcuban, J, O., Dinauanao, A., Sitoy, R & Arcadio, R. (2020). Factors affecting mathematical performance of junior high school students. International Electronic Journal of Mathematics Education, 15(1), 2-4. https://doi.org/10.29333/iejme/5938

Pratiwi, N., Atmoko, A., Taufiq, A., Faizah, S., & Alfaris, R. (2025). Effective Instructional Strategies for Elementary School Mathematics. Journal of Innovation and Research in Primary Education, 4(2), 380–391. https://doi.org/10.56916/jirpe.v4i2.1420

Rosly, N. S., & Nordin, S. N. W. (2025). Implementation of cooperative learning among secondary school mathematics teachers. Jurnal Intelek, 20(1), 103–115. https://journal.uitm.edu.my/ojs/index.php/JI/article/view/9411

Rosly, N. S., & Syaiful Azuan, A. Z. (2024). Empowering secondary school teachers and students with effective mathematics teaching and learning strategies. Jurnal Intelek, 19(2), 56–68. https://journal.uitm.edu.my/ojs/index.php/JI/article/view/6440

Schwarz, B. B., Swidan, O., Prusak, N., & Palatnik, A. (2021). Collaborative learning in mathematics classrooms: Can teachers understand progress of concurrent collaborating groups? [Review of Collaborative learning in mathematics classrooms: Can teachers understand progress of concurrent collaborating groups?]. Computers & Education, 165, 104151. https://doi.org/10.1016/j.compedu.2021.104151

Siregar, T. (2026). Effectiveness of Utilizing GeoGebra in Mathematics Instruction to Enhance Students' Understanding of Derivatives [Review of Effectiveness of Utilizing GeoGebra in Mathematics Instruction to Enhance Students' Understanding of Derivatives]. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.5825342

Van der Heuvel-Panhuizen, M., Drijvers, P. (2020). Realistic mathematics education. Encyclopedia of Mathematics Education, 2. https://link.springer.com/rwe/10.1007/978-3-030-15789-0_170

Young, J., Candace Raygoza, M., Madkins, T., Lawler, B., & Roberts, T. (2022). Revisiting Urban Mathematics Education. Journal of Urban Mathematics Education, 15(2). https://doi.org/10.21423/jume-v15i2a511