

Theoretical Framework

This paper explores how a growth mindset enhances adolescents' learning experience in urban mathematics classrooms by reviewing current research and making practical recommendations.

My theoretical paradigm and positionality have been shaped by my experience working as a high school math teacher and two educational theories: growth mindset and progressivism.

Growth Mindset

- Believing that we can become more intelligent through hard work (Dweck, 2010).
- This mindset encourages students to develop self-efficacy and resilience.
- This mindset overcomes deficit theory, viewing mistakes and setbacks as learning opportunities rather than failures and what they lack.

Progressivism

- The idea that "learning by doing so that understanding and meaning can take place" (Hopkins, 2017, p. 61).
- We need to experience to learn meaningfully.
- We need to take risks and fail, so we have the learning opportunities to grow.

Even though math is recognized as an important subject, it remains one of the most challenging and anxiety-provoking subjects for students across educational contexts (Amir & Ansari, 2026).

Growth Mindset + Progressivism = Positive Math Learning Experience

Image 1 My Theoretical Framework and My Belief

Research Context

Research Question

How does a growth mindset enhance learning experience in mathematics for adolescents in urban areas?

Presupposition & Bias

A growth mindset has a positive impact on students' learning, influenced by Jo Boaler's Mathematical Mindsets, which teaches how to foster a growth mindset in math, helping students of all abilities to enjoy and succeed in mathematics (Boaler, 2016).

Target population

I want to use my research in my teaching practice, so I picked adolescents in urban areas. Adolescents are usually between 10 and 19 years old, giving a broader age range to find more literature on the impact of growth mindset.

Significance of Research

Mathematics is essential in life. Adolescents play critical roles in our future. Students receiving effective and positive math education is important.

Mathematics plays a key role in contemporary education systems as it fosters logical thinking, analytical reasoning, and problem-solving abilities that are essential for informed citizenship (Amir & Ansari, 2026).

Math achievement has a great impact on lifelong opportunities such as the development of quantitative reasoning ability, helping young people move out of poverty and move towards greater prosperity and health, as well as other benefits in jobs and in life (Boaler & Dieckmann, 2026).

Literature Review

Thesis Statement

A growth mindset meaningfully enhances learning experience in mathematics for adolescents in urban areas as it promotes developing self-efficacy and a mathematical belief, reduces math anxiety, and overcomes stereotype threats. Practicing a growth mindset has a potential positive impact on students' math achievements, which also highlights the importance of teachers' roles when implementing a growth mindset teaching in classrooms.

5 Themes of the Literature Review

Self-efficacy and a Mathematical Belief

- Mathematical abilities are not something we are born with, but rather something we can work on by putting effort into it through practicing self-efficacy and a mathematical mindset.
- Boaler and Dieckmann (2026) noted that students with a growth mindset embrace challenges, persevere through setbacks, and learn from mistakes and others' successes.

Math Anxiety

- A growth mindset in math classrooms can help decrease math anxiety among students.
- Implementing a growth mindset in math education empowers students, encouraging them to stay calm and in control even during tests and while working on complex questions.

Stereotype Threats

- A growth mindset enhances students' learning experience by weakening the effect of stereotype threats, especially the math-gender stereotype threats.
- Song et al. (2022) found that the growth mindset training reduced the effect of the math-gender stereotype threat on female students and significantly improved their math performance.

Math Achievement

- Whether a growth mindset directly impacts students' math performance is inconclusive, but students with a growth mindset develop self-efficacy, intrinsic motivation, and resilience to setbacks, which impact their math performance.

Teacher Practices

- Wang et al. (2024) noted that teacher and student relationships are crucial when students develop math efficacy and reduce math anxiety.
- Teachers need to provide a safe learning space, provide growth mindset-oriented feedback, and prioritize process and understanding over getting correct answers.

Gaps in the Literature

Contradiction: A growth mindset does not directly cause high math achievement.

Limitations: Inconsistent definitions of urban, limited research specifically focused on urban adolescent populations, and limited research on adolescents in mathematics.

Future research: Focus on researching adolescents in urban areas that share a similar culture, region, or setting.

Recommendations

3 recommendations on how to effectively incorporate growth mindset teaching in the classroom

1. Explicitly Teaching Growth Mindset

- A growth mindset needs to be taught explicitly by teachers. Teachers should teach students to view mistakes, failures, and setbacks as learning opportunities. Teachers should teach students to develop self-awareness.
- Barriers and feasibility: Teachers have limited time. Using a brief in-class exit ticket, learning log, or weekly check-in can minimize the time spent, yet students are receiving opportunities to self-assess and positive encouragement.

2. Creating Classroom Practices that Reward Process Rather than Correct Answers

- Teachers need to create a space that encourages mathematical processes rather than correct answers. Boaler (2016) suggested that teachers should provide open-ended tasks that teach important mathematics, inspire interests, and encourage creativity, and offer a choice of tasks to encourage students to practice autonomy.
- Barriers and feasibility: Students still feel pressure for grades and an exam-focused curriculum. Teachers can use formative assessments to inspire students to think in depth, make connections, and encourage creativity, so students' grades are not affected by their learning.

3. Providing Professional Learning for Teachers

- Fu and Kartal (2023) confirmed that growth mindset training is necessary to enhance teachers' self-efficacy and mindset for teaching mathematics. Lamlong et al. (2026) noted that teachers benefit most when they engage in personal learning.
- Barriers and feasibility: Professional development can cause financial concerns and a lack of time. Implementing growth mindset training in our current professional development can reduce the potential barriers.

Conclusion

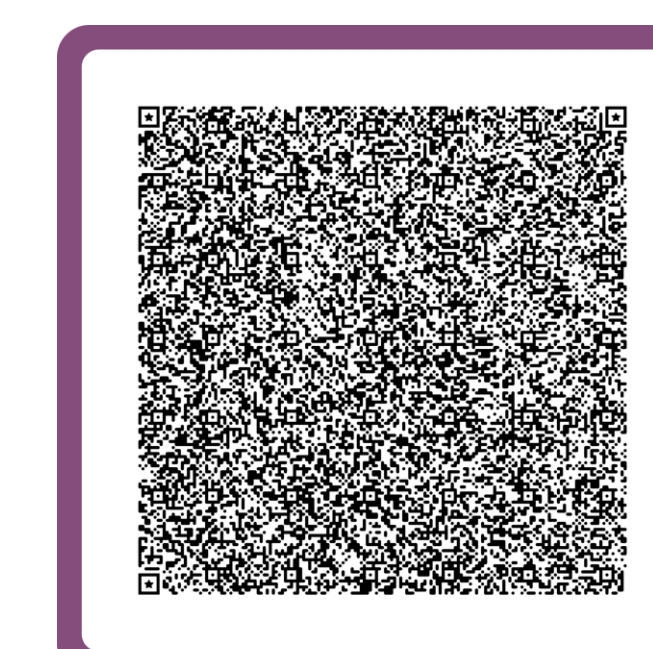
A growth mindset enhances learning experiences in mathematics for adolescents in urban areas.

A growth mindset helps students develop self-efficacy and math belief that they can learn and do math.

A growth mindset helps students reduce math anxiety and overcome stereotype threats, so they can focus on learning mathematics.

A growth mindset has a potential impact on increased math achievement.

A growth mindset needs to be taught by teachers explicitly. Creating a safe learning space, focusing on process rather than correct answers, valuing mistakes and setbacks, and providing continuous positive encouragement are important.



References