High School STEM Problem

Author: Bryson Sinclair

Problem Statement

High school students often struggle to stay engaged and motivated while learning STEM (Science, Technology, Engineering, and Mathematics) subjects. Traditional classroom teaching methods, such as lectures, textbooks, and rote memorization, tend to focus on theory rather than practical application. As a result, many students fail to see the real-world relevance of what they are learning, leading to decreased interest, lower academic performance, and reduced pursuit of STEM-related careers.

Who is experiencing the problem?

The primary group experiencing this problem is high school students, typically aged 14–18, who are required to take STEM-related courses.
Secondary stakeholders include teachers (who struggle to maintain engagement), schools (which face declining STEM performance scores), and society at large (which depends on future STEM professionals).

What is the problem?

Students find STEM subjects boring, abstract, or difficult to relate to everyday life. The lack of hands-on, interactive, or real-world learning opportunities makes it hard for them to connect concepts to practical applications. This disengagement can result in poor comprehension, low grades, and reduced confidence in their ability to succeed in STEM.

Where does the problem present itself?

The problem occurs primarily in high school classrooms, both in-person and online, where traditional teaching methods dominate. It is especially evident in schools with limited access to modern learning tools, such as laboratory equipment, digital simulations, or project-based learning programs.

Why does it matter?

This issue matters because STEM literacy is increasingly essential for success in modern careers and informed citizenship. If students lose interest or confidence in STEM during high school, they are less likely to pursue STEM degrees or careers, contributing to talent shortages in critical fields like engineering, data science, and healthcare. Additionally, disengaged learning can negatively impact overall academic motivation and long-term career opportunities.