



Análisis comparativo de la metodología STEM y otras metodologías activas en la educación general básica [

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text (article)

Analítica

This article presents a comparative analysis between the STEM methodology (Science, Technology, Engineering, and Mathematics) and other active methodologies applied in Basic General Education (BGE). The objective of this study is to evaluate the effectiveness of the STEM methodology in comparison with other active methodologies, such as project-based learning (PBL), cooperative learning, and problem-based learning (PBL), in developing cognitive, social, and emotional skills in BGE students. As educational demands evolve, it is crucial to identify and understand which teaching methodologies are most effective in preparing students for the challenges of the 21st century, especially in areas that require critical thinking, creativity, and problem-solving skills. The study was conducted with a sample of 120 BGE students, divided into four groups, each exposed to a different methodology: STEM, PBL, cooperative learning, and problem-based learning. Over a 12-week period, various activities and assessments were applied to measure the impact of each methodology on developing competencies in science, mathematics, and social skills. Data were collected through pre- and post-intervention assessments, motivation surveys, and classroom observations. The results indicated that the STEM methodology had a significantly positive impact on developing competencies in science and mathematics. Students who participated in the STEM group showed notable improvements in critical thinking, problem-solving, and conceptual understanding compared to the other groups. However, active methodologies such as PBL and cooperative learning also proved effective, particularly in fostering social skills such as cooperation, communication, and teamwork. This study concludes that, while the STEM methodology is highly effective in enhancing scientific and mathematical competencies, combining STEM with other active methodologies can provide a more comprehensive approach. By integrating STEM with me

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