Generative Artificial Intelligence agent in scientific research. An explanatory analysis of classroom learning

Intelligent agents

There is a lack of knowledge regarding the capacity, usefulness and effectiveness of some technological resources, such as intelligent agents with artificial intelligence in educational contexts for scientific research. This motivates the development and analysis of a new pedagogical strategy that uses generative intelligent agents with artificial intelligence in the construction of research projects.
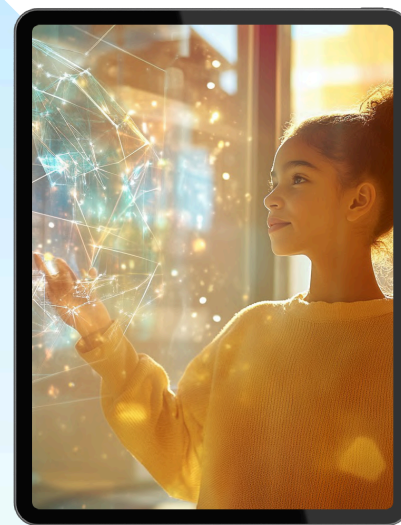
Objective

Therefore, the objective is to verify the effectiveness of a new pedagogical procedure and the design of activities that employ generative intelligent agents with artificial intelligence to enhance learning in scientific research.
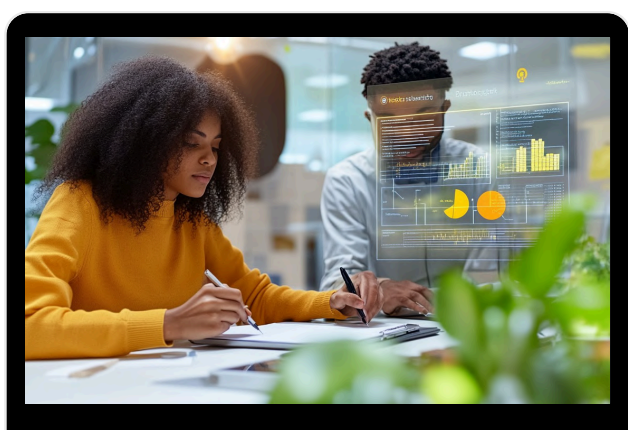
Method

The method used was explanatory with a quasi–experimental longitudinal and prospective design.

Steps to follow

Four project steps and their respective hypotheses were established, instruments were developed and validated and applied to a sample of 111 study elements organized into one comparison group and two intervention groups. A repeated measures ANOVA analysis was conducted.
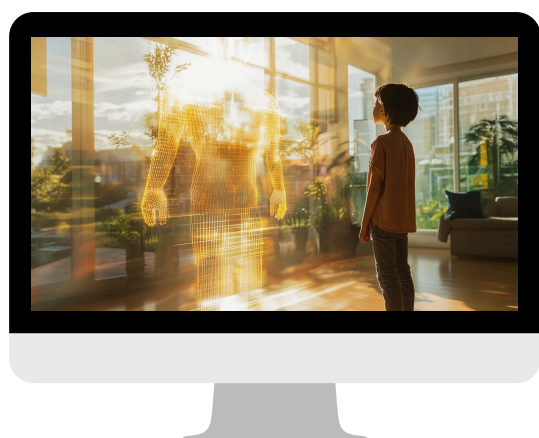
The differences

Significant differences were demonstrated in the progress of the intervention groups compared to the comparison group in learning,:

The differences II

Research idea development by identifying research gaps and objectives; study formulation by identifying bibliographic references and study context; research design by determining the method and methodological procedure; and data analysis by interpreting descriptive–level data. The new methodology used and assisted by artificial intelligence yielded satisfactory overall results.