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Título WHAT MESSAGES FOSTER ACADEMIC ACHIEVEMENT?
TEACHER-STUDENT RELATEDNESS, STUDENTS' SELF-
EFFICACY AND EMOTIONS

Title: What messages foster academic achievement? Teacher-student relatedness, students' self-efficacy and emotions.

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Introduction: Every teacher in the service of education seeks one thing: to foster successful students. But how can they achieve this? Whereas most research has built upon this evidence on autonomy supportive behaviour, little attention has been given to other teaching behaviour that could also intervene in such processes, such as teacher messages.

Aims: In this study, a mixed method and prospective design was followed to achieve two objectives: code student responses to an open-ended question about their teachers' teaching using AI and examine how message framing (gains or losses) predicts student-teacher relatedness, self-efficacy, academic achievement emotions, and grades.

Method: 525 students from grades 8 to 12 participated in the present two-wave study. AI-based GPT-3 pre-trained model was used to code, following a rubric of pre-establish categories, the open-ended question responses. The agreement among one of the authors and the AI tool was satisfactory, proving the usefulness of these tools for coding purposes. To test the proposed relations among the variables we relied on Structural equation modeling (SEM) using Mplus software.

Results: Results from the SEM revealed that teachers' messages indirectly influenced student grades through the suggested pathways, rather than having a direct impact.

Message framing related differently with the assessed variables, with gain-framed messages consistently showing stronger predictive values with the variables assessed.

Discussion/conclusion: These findings highlight GPT-3 as a valuable resource for researchers coding data and teachers' messages as a practical tool for teachers to enhance student well-being during lessons. Attending the hypothesis model, results emphasized the relevance of teachers' forms of communication to persuade students to follow their advice. Not only could gain-framed messages influence students' success regarding their academic performance, but it could also help teachers build quality relationships with their students, promote adaptative achievement emotions and influence students' self-efficacy beliefs.

Keywords: Message-framing, academic performance, cognitive-value theory, achievement emotions, artificial intelligence.

