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The Dynamics of Creative Thinking: Teacher Behavior and Student Novelty in Science Education

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Abstract

Engaging in science lessons requires creative thinking skills. These skills are expressed in the verbalized ideas of students during these activities. The objective of this study was to analyze how momentary teacher behavior is associated with the level of novelty of scientific reasoning in teacher-student interactions. Participants were 14 teachers together with a small teaching group of 4-7 year old students (around 64 students in total). One lesson per teacher was recorded prior to a professional intervention. We categorized the verbalizations of both teachers and students in real-time, assessing level of novelty for all student statements and categorizing teacher utterances as divergent, convergent, or neutral. Preliminary analyses showed that interaction patterns are specific for each teacher and class. Generally, students tended to express lower levels of novelty following teachers' convergent statements. However, teachers' divergent statements did not lead to higher levels of student novelty.

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