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**Teacher-assisted open problem solving.**

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Summary: Previous research has developed several problem-solving models and suggested that the teacher plays a crucial role in guiding students' problem solving. However, less is known about the particularities of problem solving and teacher guidance when dealing with open problems which include multiple possible solution pathways. The aim of this study is to understand students' open problem-solving processes and teachers' ways of supporting them. Data collection involved videotaping one 9th grade mathematics lesson with two video cameras and capturing the screens of the students' computers. Seven student pairs worked on an open problem using GeoGebra under the guidance of a teacher trainee. We found that students had various kinds of problem-solving processes and that the teacher had a crucial role in guiding them. We elaborate on 9 ways how the teacher guided students to change between phases in open problem solving.

*Classification:* D53 U53

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