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Student Difficulties with the Propagation of a Pulse in a String

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This study explores students' difficulties with distinguishing between the horizontal motion of a pulse in a string and the vertical motion of points of the string. A conceptual questionnaire was initially designed and indicated several misconceptions students had about the topic. Based on the findings, three levels of scaffolding support to help students overcome these difficulties were provided. The result shows that scaffolding level 1 is less beneficial to the students. However, in scaffolding level 2 and 3, student performance gradually improved in different ways. We suggest that this is due to both prior knowledge and procedural competences of students.

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