

A Framework to Gauge Mathematical Understanding: A Case Study on Linear Algebra Concepts

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KEYWORDS Communication. APOS Theory. Mental Structures. Symbolism

ABSTRACT A framework is arrived at to help gauge the level of mathematical understanding that could be suggested by an examination of a student's written responses to mathematical problems. This framework has been to make conclusions on two students' level of mathematical understanding and use of mathematical symbolism to communicate their understanding of operations on matrices in an external form to others. It was found that for those two students mathematical symbolism served largely as an instrumental role to keep track of their thinking. At times the incorrect use of a mathematical symbol, for example the equal to sign, led the student to make illogical conclusions. Further it was found that drawing students' attention to their incorrect use of mathematical symbolism and the lack of explicit communication of their thinking to others could help to clarify and even modify existing schema that they use to find possible solutions to given tasks.