

**ZMATH 2016e.00740**

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**The definition of the scalar product: an analysis and critique of a classroom episode.**

Int. J. Math. Educ. Sci. Technol. 47, No. 5, 750-761 (2016).

Summary: In this paper, we present, analyse and critique an episode from a secondary school lesson involving an introduction to the definition of the scalar product. Although the teacher attempted to be explicit about the difference between a definition and a theorem, emphasizing that a definition was just an arbitrary assumption, a student rejected the teacher's definition in favour of his own alternative. With reference to this particular case, we seek to explore some ways in which teachers can introduce mathematical definitions to students so as to support, rather than attempt to circumvent, their mathematical sense making. In this regard, we believe that it is important to develop learning opportunities for students which help them to gain some appreciation of important structural and historical reasons that underpin the definitional choices made.

*Classification:* G70 E40

*Keywords:* definitions; scalar product; sense making

doi:10.1080/0020739X.2015.1117148