

THE CALCULATOR AS AN INSTRUMENT OF VALIDATION OF MATHEMATICAL KNOWLEDGE: A CASE STUDY

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The discussions that arise when demonstration in mathematics is dealt with often cause opposing positions regarding the wisdom of its use. If, in addition, we consider the contribution of new technology when teaching, it is necessary to reflect on how the form of validating mathematical knowledge is affected, if it is at all altered, or not. In this paper we describe a case study with teachers; our objectives were to inquire into teachers' conceptions on mathematical demonstration, and the value they place on it in an educational environment. Also, we were interested in their conceptions about what new technology can contribute to this topic and how they examined and validated their statements through the use of TI-92 calculator. Out of the five teachers who participated in the study, only one declared that it was possible to do formal demonstrations using technology. Indeed, she defended the statement that, in fact, the example she presented showed mathematical reasoning as used in the formal discipline.

According to the theory considered for this study, the idea of *argumentation*, proposed by Duval (1999) is present in the opinions of the subjects in terms of it being a type of reasoning that does not have the dose of rigor pertaining to demonstration, although it is a type of justification of important and valid interest in junior high school mathematics education. Also, it can be concluded from the participants' responses that they understood that the work with argumentation requires careful handling and that it will not lead rapidly, not directly, to formal justification.

Reference

DUVAL, R. (1999) *Argumentar, Demostrar, Explicar: ¿Continuidad o ruptura cognitiva?*, México D.F.: Grupo Editorial Iberoamérica.

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