

Students and difficulties: some thoughts from Seymour Papert

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Abstract

Papert compares learning difficulties in mathematics with learning difficulties with a foreign language. His conclusions resonate with Bergeron and Barallobres' analysis.

Bergeron and Barallobres' (2019) study about students (said to be) 'in difficulty', echoing an article by Houle and Giroux published here earlier (2016), reminded us of a comment made by Seymour Papert in relation to his concept of *Mathland*:

It is thoroughly embedded in our culture that some of us have a head for figures while most don't, and accordingly, most people think of themselves as not mathematically minded. But what do we say about children who have trouble learning French in American schools? Whatever the explanation of their difficulty, one certainly cannot ascribe it to a lack of aptitude for French – we can be sure that most of these children would have learned French perfectly well had they been born and raised in France. [...] In the same way, we have no better reason to suppose that these children who have trouble with math lack mathematical intelligence than to suppose that the others lack "French intelligence". We are left with the question: What would happen if children who can't do math grew up in a Mathland, a place that is to math what France is to French? [...] while what happened in the regular math class was more like the learning math as a foreign language. [...] In the math class, where knowledge is not used but simply piled up like the bricks forming a dead building, there is no room for significant experimenting. (Papert, 1993, p. 64)

For Papert, learning mathematics in school is like taking a foreign language class in which very little is offered for students to actually do mathematics and develop mathematical ways of thinking. With his *Mathland*, Papert presents a very different way of thinking about mathematics classrooms, and about the struggles students experience therein.

According to Papert, the problem is not (in) the student, it is not a matter of cognitive limitations, but it is mostly *a weakness of the environment* in which the student evolves. He argues that one way to help students do better in mathematics is to enrich the mathematical environment of the classroom, to immerse students in mathematically richer situations, and to get them to *do* mathematics as much as possible (as oppose to get them to 'learn' (about) mathematical ideas). In other words, try not to change John, but focus on changing and enriching John's environment. Bergeron and Ballarobres' paper suggests giving more attention to mathematics itself, when thinking about what we do with students 'having trouble with/in mathematics': isn't this one step in Papert's very direction?

References

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