CONSTRUCTING THE PROBLEM SOLVING CITIZEN

Jonas Dahl
Malmö University

Emphasising problem solving in the Swedish mathematics curriculum is (as in many other curricula) because it is seen both as an end in itself, but also as a means to “guarantee that all students could develop the general competences required […] as citizens in an increasingly complex society” (Skolverket, 2011, p. 11). Therefore, I suggest that the goal of mathematics problem solving in schools is about creating, what I call, the problem-solving citizen. From this assumption, the question becomes one of how this goal is achieved. A crucial part of the question is what kinds of problems are featured in this construction. Roughly, problems can be divided into pure mathematical and applied ones. Drawing on Bernstein (2000) and Dowling (2005), I argue that for students to become problem solving citizens, they need to leave the horizontal (context-bounded, mundane) discourse, used in applied questions, and enter the vertical (context-free, esoteric) discourse of mathematics, used in pure mathematical questions.

Therefore, my research question is: In different upper secondary programs, how is the problem-solving citizen recontextualised into tests and students’ perceptions?

In the poster, I describe how different agents (curriculum makers, national test makers and teachers as test makers) make use of the different kinds of problems (pure/applied) in relation to the goal of producing problem solving citizens. I also report on a pilot study in which students were interviewed on their perceptions about problems and problem solving. My initial analysis shows that discussions of problem solving, as well as descriptions of the kinds of problems that are or should be used in policy documents are ambiguous. Applied problems seem more commonly used for teaching and assessing problem solving. The pilot study suggests that students can see the difference between pure and applied problems and recognise that this difference is important in regard to their future as problem-solving citizens.

References

