

**ABILITY TO NOTICE OR PROFESSIONAL VISION OF (FUTURE) MATHEMATICS
TEACHERS**

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A key requirement of successful initial teacher education is the development of noticing, i.e., shifting attention to features relevant to the specialized goals of teaching. According to Schoenfeld (2011), noticing is consequential (what you see and do not see shapes what you do and do not do); it can initiate changes in practices; teachers' noticing is tied to their orientations and resources; it is paramount for adaptive and responsive teaching in which teachers attend closely to pupils' ideas. Teacher noticing is characterised in different ways, most frequently as involving the processes of attending to particular events in an instructional setting and making sense of these events. Noticing can be seen in connection to professional vision which has two components: (a) noticing or selective attention and (b) knowledge-based reasoning. Noticing has been widely studied. We mostly build on studies which deal with pre-service mathematics teachers and studies investigating participants' attention to content-specific phenomena. The lecture will be built around two strands of our research which has been conducted with Czech pre-service and in-service mathematics teachers.

The first strand looks into the pre-service teachers' structure of attention (using the framework of van Es and Sherin, 2010) and how it is influenced by a) two 4-week teaching practices and mathematics education courses in which noticing is not the main focus (the videos are used as a means of illustrating theory, providing students with experience and introducing them to the complexities of teaching and learning), b) a guided observation intervention in which participants complete video-observation tasks aimed at salient aspects of teaching. The second strand focuses on the ability to notice mathematics-specific phenomena, that is phenomena that could be observed, explained, inferred or interpreted in relation to either mathematical or didactic issues pertaining to the teaching or learning of mathematics. Again, we look into the possible effects of a) and b) above and also c) compare the ability to notice content-specific phenomena of pre- and in-service teachers.

Existing research hints at the value of targeted video courses in the development of professional vision, but often raises questions about the sources of shifts in the pattern of attention. Our results suggest that teaching practice had little influence on attention, but even a short program of video observation did result in a shift of many aspects. However, comparing results across the literature suggests one important part of professional vision does not always develop in the same way and we will suggest a number of potential reasons for this.

References

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