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The Influence of Teacher Guides on Teachers' Practice: A Longitudinal Case Study

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The issues concerning the use of curriculum resources such as teacher guides and textbooks are important because they can promote a teacher's pedagogical design capacity, or a teacher's ability to use personal resources to adapt the curriculum materials and to achieve productive and beneficial instructional episodes in the classroom (Davis & Krajcik, 2005).

From the idea of teaching as design, Brown (2009) built a Design Capacity for Enactment Framework (DCE) which represents the idea that the curriculum resources and a teacher's personal resources both affect the designing and enacting of classroom instruction. Viewed together, the factors of the curriculum resources and teachers' resources provide a basis for understanding teachers' use of curriculum resources in terms of offloading, adapting, and improvising. These three concepts are different types of mobilization of curriculum resources and are best understood as a spectrum of agency or responsibility for guiding instruction (Brown, 2009). The voice of the curriculum resource refers to how the authors or designers of the materials are represented and how they communicate with the teacher (Remillard, 2012). Remillard (*ibid*) distinguishes between talking *through* the teacher and speaking *to* the teacher. Most curriculum resources place primary emphasis on what the teacher should do and this is denoted as talking *through* teachers. When the resource communicates with teachers about central ideas in the curriculum, this denotes speaking *to* the teacher. Some authors have argued that speaking *to* teachers is one way that curriculum resources can be designed to be educative for teachers (Davis & Krajcik, 2005). In this way, a curriculum resource offers transparent and direct guidance related to the reasons and purposes underlying task selections (design rationale) or in anticipating student responses (Stein & Kim, 2009).

Previous results on the utilization of resources in mathematics instruction in Croatia (Glasnović Gracin, 2011) show that the textbook is the primary resource in teachers' lesson preparation; the next most frequently used resource is the accompanying teacher guide. In 2014, new school textbooks were approved by the Croatian Ministry of Education for the subsequent four-year school cycle. Since the planned curriculum had not been changed, the new editions of the most frequently used mathematics textbook series did not undergo significant changes. However, in line with recommendations from the Ministry of Education, the teacher guides that accompany the textbooks were revised to include, for example, opportunities for discovery learning.

This situation, whereby the teacher guides were revised in 2014, while the planned curriculum and the textbook content remained the same, prompted us to conduct an investigation into the influence

of teacher guides on teachers' practice. The study encompassed the following questions: 1) What are the differences in the structure, textbook mobilization and voice between the two editions of the teacher guide? 2) How does the teacher guide influence the use of the textbook in the observed mathematics lessons? Do the changes in the content of the new edition of the teacher guide cause a change in teacher practice?

The study was conducted in two time spots, in 2013 and 2017. It encompassed analysis of the two editions of the teacher guide for grade six (published before and after 2014), classroom observations, and interviews with two experienced mathematics teachers in Croatia. Both of the teachers chosen for this study used the same textbook series in 2017 as they did in 2013. The analysis of the transcribed interviews, observation notes and teacher guide content focused on the different mobilizations of resources (offloading, adapting, improvising). The interviews also provided an opportunity for the teachers to explain why a particular type of resource mobilization was used.

The results show the relative stability of teaching practice, but suggest, however, that the teacher guide can have an influence on the instruction. The analysis of the teacher guides showed that both editions have the same structure. The voice of the guides can be described as talking *through* the teacher, but the design of the activities in the new edition can be defined as transparent. Moreover, the new edition contains additional activities and approaches such as discovery learning. While for most lessons the old teacher guide encourages offloading, the new guide additionally suggests numerous activities that do not use the textbook as a mediator, which promotes adapting and improvising with curriculum resources. In terms of the teachers' practice, the results show that the new edition of the teacher guide inspired the participants to design their own inquiry-based learning activities and that offloading is utilized less often. This indicates that the teacher guide can have an educative impact on teachers, supporting their use of active teaching methods in the classroom.

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