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# Investigation of in-service teachers' and pre-service teachers' beliefs and sense of efficacy regarding data usage

Abstract of PhD dissertation

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In-service teachers' everyday work includes using student data to enhance both instruction and learning. Student data originates from various sources (national competence assessments, oral exams, tests etc.), including demographic characteristics and absenteeism. Accessing, analyzing, interpreting, and appropriately utilizing data is challenging for teachers. International research has shown that data use for improving instruction and learning is greatly influenced by teachers' self-efficacy. There has been limited attention to investigating teachers' data use in Hungary. Therefore, the aim of our study is to understand in-service teachers' and pre-service teachers' beliefs and sense of efficacy regarding data use. Using the method of data triangulation, we conducted two studies, each preceded by pilots. Data were collected using self-developed instruments for data use, assessment, and background information, as well as two adapted instruments: the Data-Driven Decision-Making Efficacy and Anxiety Inventory (3D-MEA, Dunn et al., 2013) and the Data Use Practices survey (Reeves et al., 2016).The large-scale surveys yielded $N_{teachers}$=275 and $N_{student teachers}$=250 responses.

The results indicate that a high ratio of in-service teachers have high self-efficacy in accessing, interpreting, and utilizing information and assessment results from external sources in their teaching, albeit with high levels of anxiety associated with these activities. Student data is primarily used to support students, with only a small proportion being incorporated into instructional activities. In contrast, pre-service teachers vary in their self-efficacy of using student data, and many experience low anxiety about data or express greater reliance on data in the teaching-learning process. Furthermore, the findings suggest that data use courses in teacher education have a significant impact on both in-service teachers' and pre-service teachers' self-efficacy beliefs regarding data use. It also became evident which courses significantly impact specific dimensions and the number of courses necessary to increase self-efficacy in a particular dimension.

This research highlights the importance of improving the use of commonly available student data for instructional purposes starting from teacher education programs. Data use courses significantly impact self-efficacy in this respect, which is an indicator of data-driven decision making and thus of increased student performance (cf. Dunn et al., 2013). Based on the results, the author believes that this research serves as a good starting point for future studies examining classroom data use from various perspectives and laying the groundwork for international comparative studies.