EVALUATION OF A SOFTWARE SOLUTION FOR REFRESHING PRE-SERVICE TEACHERS' MATHEMATICS CONTENT knowledge

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Mathematics has a privileged place in the school curricula. One of the primary concerns of teacher education institutions is to prepare future teachers to take a leadership role in school mathematics education. Wahyu, Mahmudi, and Murdanu (2018) argued that pre-service teachers should have sufficient knowledge of both mathematics and pedagogy to be successful in their teaching career. However, Bowie, Venkat, and Askew (2019) indicated a need for student teachers to revisit primary school mathematics that provides a deep understanding of key mathematical concepts in order to be better prepared for future teaching careers. This poster draws from our 2-year Consecutive B.Ed. program in which students are required to complete an online elevatemymath (EMM) before their mathematics methods course. The EMM was designed as self-paced modules where pre-service teachers first complete a pretest, followed by modules and the post-test. This software solution was implemented in response to elementary pre-service teachers' perceptions about their level of mathematical preparedness and challenge of split attention in attempting to (re)learn elementary mathematics content alongside learning the specific mathematical (pedagogical) knowledge and classroom practices for effective teaching.

We were interested in the perceived value of the online refresher course in pre-service elementary teachers' perceptions of their mathematical preparedness and competence for their methods course in the program. We asked: How do pre-service teachers perceive the value of a software solution for refreshing their mathematics content knowledge? In what ways the software solution was helpful in engaging pre-service teachers in the methods course? and, to what extent was the software solution beneficial for the pre-service teachers in preparing them to teach elementary mathematics? Data was collected using an online questionnaire focusing on the perceived value of the EMM refresher course, pre-service teachers' perception of preparedness for engagement in the methods course, and their perception of preparedness to teach mathematics in the first year. The questions were a mix of quantitative and qualitative open text responses.

Data were analyzed based on emergent themes related to perceived value and perception of preparedness and the percentages of responses. The numerical and free-response (qualitative) data (anonymous) from online surveys (n = 204) over a 2-year period shows a variation in pre-service teachers' perceived value of EMM refresher course and perception of preparedness to teach elementary mathematics. Findings indicate that there was a considerable increase in the depth of knowledge and degree of connectedness of elementary school mathematical concepts after the refresher course. More than 50% of the pre-service teachers felt that the refresher course contributed to positive growth and better prepared them with planning and assessing a mathematics class. Some of the pre-service teachers did express that having a refresher course helped them to some extent during their first teaching practice and the refresher course was a good value for money. For example, one pre-service teacher expressed that "the refresher course helped in revising some concepts, recognizing some areas that needs improvement. Knowing my strengths helped me in moving forward."

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