RELATION BETWEEN PRE-SERVICE TEACHERS' PERFORMANCE AND THEIR SELF-ASSESSMENTS WHEN USING COMPUTER ALGEBRA SYSTEMS: A PILOT STUDY

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Self-assessments form the de-facto standard for measuring pre-service teachers' digital competence, for instance, according to the TPACK framework. Such self-assessments are prone to biases (e.g., social desirability, Dunning-Kruger effects) (Kan et al., 2018). So, it is suggested to shift towards performance assessments, requiring teachers to work on standardized problems close to practice (Tabach, 2021). The latter is still rarely used as objectively rating responses is costly. Hence, it is important to investigate innovative test designs that combine the benefits of both assessment approaches.

Thus, we examined, whether pre-service teachers correctly self-assessed their performance regarding the use of digital tools immediately after working on a performance task. If so, efficient post-performance self-assessments may be used instead of a costly objectively rated performance indicator. We developed a test of teacher competence regarding the use of digital tools, combining performance tasks in an open and self-assessments in a closed format. Pre-service teachers had to do a CAS tutorial from a student's perspective and to self-assess their competence level concerning the use of tutorials in teaching (4 steps, e.g., 4=*"I can develop such tutorials myself."*). Depending on the self-assessment, we presented a performance task (e.g., 4: create a tutorial from scratch), before they self-assessed their performance again.

A pilot study with $N = 29$ pre-service teachers showed a correlation between the objectively rated performance indicators and post-performance self-assessments (Spearman $\rho = .32$, p < .05). In general, pre-service teachers with lower performance evaluated their competence to be lower. Further, we observed tendencies to overestimate the competence. The low-medium correlation indicates that self-assessments cannot be considered as a reliable indicator. So, we suggest focusing future development efforts on performance indicators independent of self-assessments.

References

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