

Advances and Challenges in Assessing Students' Learning Competencies in 21st Century Higher Education

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Abstract : In 21st century higher education (HE), the diversity among students has increased in recent years due to the internationalization and higher mobility. Offering and providing equal and fair opportunities based on students' individual skills and abilities instead of their social or cultural background is one of the major aims of HE. In this context, valid, objective and transparent assessments of students' preconditions and academic competencies in HE are required. However, as analyses of the current states of research and practice show, a substantial research gap on assessment practices in HE still exists, calling for the development of effective solutions. These demands lead to significant conceptual and methodological challenges. Funded by the German Federal Ministry of Education and Research, the research program 'Modeling and Measuring Competencies in Higher Education - Validation and Methodological Challenges' (KoKoHs) focusses on addressing these challenges in HE assessment practice by modeling and validating objective test instruments. Including 16 cross-university collaborative projects, the German-wide research program contributes to bridging the research gap in current assessment research and practice by concentrating on practical and policy-related challenges of assessment in HE. In this paper, we present a differentiated overview of existing assessments of HE at the national and international level. Based on the state of research, we describe the theoretical and conceptual framework of the KoKoHs Program as well as results of the validation studies, including their key outcomes. More precisely, this includes an insight into more than 40 developed assessments covering a broad range of transparent and objective methods for validly measuring domain-specific and generic knowledge and skills for five major study areas (Economics, Social Science, Teacher Education, Medicine and Psychology). Computer-, video- and simulation-based instruments have been applied and validated to measure over 20,000 students at the beginning, middle and end of their (bachelor and master) studies at more than 300 HE institutions throughout Germany or during their practical training phase, traineeship or occupation. Focussing on the validity of the assessments, all test instruments have been analyzed comprehensively, using a broad range of methods and observing the validity criteria of the Standards for Psychological and Educational Testing developed by the American Educational Research Association, the American Economic Association and the National Council on Measurement. The results of the developed assessments presented in this paper, provide valuable outcomes to predict students' skills and abilities at the beginning and the end of their studies as well as their learning development and performance. This allows for a differentiated view of the diversity among students. Based on the given research results practical implications and recommendations are formulated. In particular, appropriate and effective learning opportunities for students can be created to support the learning development of students, promote their individual potential and reduce knowledge and skill gaps. Overall, the presented research on competency assessment is highly relevant to national and international HE practice.

Keywords : 21st century skills, academic competencies, innovative assessments, KoKoHs

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