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Editorial: Student selection in higher education: current situation, challenges and developments

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Editorial on the Research Topic

Student selection in higher education: current situation, challenges and developments

This Research Topic focuses on present-day challenges related to the process of admissions into higher education. It brings together various contributions concerning selection procedures within programs that experience exceedingly high demand and have limited available places. While the meritocratic approach, utilizing aptitude tests, is commonly adopted and deemed equitable, it is not without its drawbacks. Although aptitude tests have demonstrated validity, they have faced criticism for their potential to disadvantage certain candidate groups. The articles in this issue start with the development of a new test, explore the acceptance and fairness of an existing test, and delve into further advancements, including the transition to computer-based testing.

Watrin et al.'s inaugural article sheds light on the present state of selection procedures for bachelor psychology programmes in Germany. The authors present their work on designing and initially validating a new admission test, which draws upon an extensive review of subject-specific achievement tests, contemporary models of cognitive ability, and a comprehensive taxonomy of the bachelor psychology curriculum. The study demonstrated that the newly developed test battery met psychometric standards and, importantly, exhibited the ability to predict university GPA after 2.5 years, surpassing the predictive power of high school GPA alone. Unidimensional measurement models were established for all subtests, confirming their construct validity. At a higher level, a single general factor accounted for the observed data effectively. This test assesses reasoning abilities, knowledge, and text comprehension but may benefit from strengthening the knowledge component and adding more criteria to enhance its predictive validity.

The subsequent article by Denker et al. explored how participants respond to university admission tests in high-stakes situations. They used the AKZEPT!-questionnaire with the main goal of refining it as an evaluation tool for improving both scholastic aptitude tests and testing conditions. The study examined applicant reactions to six scholastic aptitude tests under various conditions, including proctoring vs. test centers. Applicants generally gave positive evaluations of the tests, expressing a preference for shorter durations and specific test formats. Interestingly, test fees had minimal influence on their evaluations. Prior

information and the ability to concentrate during the test significantly affected participants' reactions. Proctoring received generally positive feedback but was slightly less favored compared to on-site tests. Most proctored test-takers felt comfortable with privacy and data protection, though about 10% had some reservations.

In the following article, [Weppert et al.](#) focused on the issue of fairness concerning the impact of preparatory activities on test performance. They discovered that performance on subtests with a higher degree of unidimensionality, such as concentration, mental rotation, and memory, were more susceptible to improvement with preparation. These findings suggest that admission tests might benefit from the integration of more intricate field-specific subtests. The aim would be to reduce the trainability of admission tests, thereby mitigating the influence of resources such as time and money on test performance. In their conclusion, the authors asserted that financial investments in test preparation are unlikely to result in significant advantages. However, they emphasized the necessity for additional research on the role of socioeconomic status (SES) in terms of promoting equal opportunities and the impact of preparatory activities on the validity of admission tests.

The fourth article by [Levacher et al.](#) focused on the construct validity of the two primary selection procedures used for medical school admissions in Germany. The study involved a comparison of various model specifications within the correlational structure of intelligence factors and examined the consistency of the g-factor (general cognitive ability) in relation to both admission tests. The confirmatory factor analyses demonstrated that both admission tests, along with their respective subtests, were strongly linked to the g-factor as well as to a test-specific factor. Despite the differences in their theoretical foundations, the results suggest a considerable overlap in the cognitive constructs being assessed by these two admission tests. From a psychometric perspective, this suggests that the simultaneous use of both student selection procedures is well founded and legitimate. However, to gain a more comprehensive understanding of the individual contributions of each admission test to the prediction of academic performance, further analysis should include university grades in the prediction models.

In the final article by [Escher et al.](#), the focus was on examining the conditions necessary for transitioning from a paper-based to a computerized format for medical school selection tests. The researchers recognize the significance of measurement invariance for ensuring meaningful comparisons of test results between different test formats. They investigated the two most crucial medical school selection tests in Germany and were able to establish initial prerequisites for a transition to computer-based testing, namely, configural and metric invariance. However, they did not fully achieve scalar invariance, which is essential for

directly comparing test scores from both test modalities. The study highlighted the need for further research in this area.

These five articles provide a summary of ongoing endeavors in Germany to develop or refine testing procedures for highly competitive university programmes. Nonetheless, to evaluate the effectiveness of selection methods, it is imperative to explore additional factors, including predictive validity and fairness. One approach to address these issues involves building a comprehensive nationwide database. The stringent data protection regulations in Germany, however, pose hurdles to studying educational progress within the higher education sector. On the one hand, we need representative data for more comprehensive analyses of the impact of specific influencing variables. On the other hand, discussions pertaining to fairness, diversity and meritocratic principles should become part of the current discourse in the context of highly selective programme admissions. Such discussions have globally led to a rethinking in selection procedures policies favoring equitable admissions, such as the reintroduction of lottery-based selection processes.

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