

Upper Secondary School Students' Academic Wellbeing

– Developing and Validating the Academic Wellbeing Scale

Research overview

Recent international research in upper secondary education has introduced the concept of academic wellbeing. The concept complements dominant mental and social wellbeing approaches [3] by foregrounding students' academic and pedagogical experiences rather than psychological functioning [1].

Purpose of study

Academic wellbeing research is a relatively new field of research, but a newer review [7] shows that academic wellbeing is closely related to students' engagement, and their capacity overcome learning challenges, is associated with resilience and with academic performance and persistence in education [2,4,5,6]. However, conceptualisations of academic wellbeing have often developed in relative isolation from broader wellbeing theory, leading to fragmented definitions [1] and empirically validated instruments for assessing academic wellbeing is lacking [8].

To build a foundation for understanding and enhancing academic wellbeing among upper secondary school students, this paper develops and rigorously validates a robust scale to measure a multidimensional construct of academic wellbeing in upper secondary schools, addressing the current lack of conceptually aligned and empirically validated instruments. The research question guiding the paper is:

How can academic wellbeing among upper secondary school students be validly measured?

Research methods

The paper is based on data from a total of 3710 1st 2nd year upper secondary school students in Denmark. It follows a multi-step scale validation process comprising 1) Literature analysis, 2) Item generation, 3) Content and response process validation, 4) Exploratory factor analysis using maximum likelihood estimation with oblimin (oblique) rotation, 5) Scale revision and 6) Confirmatory factor analysis using maximum likelihood estimation with bootstrapping. A combination of four psychometric criteria as suggested by [9].

Statistical analyses were conducted using RStudio.

Results and discussion

Phase 1 of the study resulted in the identification of four theoretically derived dimensions of academic wellbeing: negative emotions, positive emotions, meaning, and self-realisation. In Phase 2, these dimensions were operationalised into an initial pool of 22 items, which were subsequently quality-assured through response process validation in Phase 3 to ensure clarity, relevance, and conceptual alignment.

Based on an iterative exploratory factor analysis (EFA) conducted in Phase 4, six items were removed in Phase 5 following a combination of statistical criteria and conceptual considerations.

The resulting scale comprises 16 items distributed across the four dimensions and demonstrates satisfactory internal consistency: *Negative emotions* (4 items; $\alpha = 0.799$), *Positive emotions* (4 items; $\alpha = 0.876$), *Meaning* (3 items; $\alpha = 0.740$), and *Self-realisation* (5 items; $\alpha = 0.852$).

Confirmatory factor analysis (CFA) conducted in Phase 6 supported the four-factor structure, showing good to acceptable model fit (CFI = 0.960, TLI = 0.950, RMSEA = 0.054, SRMR = 0.040).

Taken together, the findings suggest that the final scale captures a theoretically coherent and empirically supported multidimensional structure of academic wellbeing. The combination of theory-driven development, response process validation, and sequential EFA and CFA strengthens the construct validity of the instrument. At the same time, the iterative item reduction highlights the importance of balancing psychometric robustness with theoretical sensibility in scale development. The paper contributes a theoretically integrated and empirically validated instrument that advances academic wellbeing research beyond existing, conceptually fragmented measures. Thus, it provides a foundation for use in both research and educational practice aimed at understanding and supporting students' academic wellbeing.

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