TASO
Transforming Access and Student Outcomes in Higher Education

TASO Access and Success Questionnaire (ASQ)

Validation process for the ASQ

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Overview

Scale validation is a complex, multi-step process that aims to develop scales that are valid (they measure what they set out to measure), reliable (they measure consistently), and appropriate for the respondents who will most likely engage with the scales.

The validation process for the ASQ scales took many steps. These are outlined in this document.

For further technical details, please contact research@taso.org.uk to obtain a copy of the underpinning technical report.

Identifying outcomes

The starting point of the validation process was to identify the outcomes that are relevant to student access and success work and have good evidence that they are associated with the ultimate outcomes of, respectively, student access to higher education, and student success (good outcomes) from higher education.

For this purpose, a rapid evidence review was conducted, exploring existing evidence as to which outcomes were relevant to the above aim. As part of the rapid review, existing measurement scales from the research literature for each intermediate outcome were also assembled. The scale's face validity (simplicity of meaning and relevance to the overall outcome being measured) was considered, alongside the feasibility of future scale deployment as part of evaluations. Based on this, long lists of scales were generated and put into consultation with the higher education sector.

A sector consultation was conducted in parallel with the rapid evidence review, to understand sector voices on which outcomes were deemed important in terms of access and success activity as well as evaluation. This involved a survey that invited respondents to rank outcomes on the long list above – just over 50 people responded, providing individual and institutional perspectives. A further 21 access and student access practitioners were also consulted in focus groups, providing insights about the outcomes their work tackled and which of these they deemed important to be included in the ASQ.

Agreeing on this set of outcomes with the sector was an important precursor of the scale validation process, ensuring that the intermediate outcomes selected were both relevant to the sector and evidence-based in terms of their link to higher education access and success and their measurement.

The combination of the sector consultation and rapid evidence review resulted in a short list of scales, and of items for each scale. Some outcomes required choosing between different versions of measurement scales, for others there were clear frontrunners in terms of which set of items would most likely be relevant. All scales and outcomes were grounded in the existing evidence previously reviewed.

Analysing existing data

To inform the development of the long list of items, substantial amounts of data, coming from 23,000+ learners, who one of the project partners had engaged as part of a student access programme, was also analysed.

This data did not include all scales on the short-list, and therefore the analysis was used alongside the rapid evidence review as one further set of information regarding how the scales could operate in the population relevant to access work.

Cognitive testing

The next step of the validation process was a procedure called cognitive testing, which involved speaking directly to twelve individual learners with similar characteristics as those who would eventually engage with these questionnaire scales as part of higher education providers' evaluation work.

The learners were presented with the relevant short-list of scales and items: learners in schools and colleges with scales and items relevant to access work; learners in higher education across a range of institutions with scales and items relevant to student success work.

The learners were asked for detailed feedback on each of the items and they identified when words were unclear, when phrasing was ambiguous or invited different interpretations, and if the response options were difficult to understand.

The items, their prompts, and their response options were then revised, to arrive at a full set of scales and constituent items.

Testing the scales with new survey data

The revised scales (together with their prompts, items, and response options) were then tested in a survey of 386 young people that included learners in schools and colleges, as well young people of similar ages not in higher education, and with early-stages higher education students.

The collected data was analysed, with the aim of understanding the internal consistency of each scale (were the items related to each other in the expected way) and their internal validity (were the items coming together as expected given how the measure was meant to work). This included carrying out confirmatory factor analysis, to test if the hypothesised theoretical structures of the scales were reflected in the collected data.

From this, and the earlier analysis using existing data, most of the scales emerged as good enough for wider use. However, there was variation in how the scales performed, and some items were not as good as initially anticipated. Further refinement and testing were therefore required.

After the removal of items that did not perform well (where the analysis indicated that this would retain the integrity of the scale) and further refinement of specific words within a small set of items, two further small-scale surveys were conducted.

One survey included a sample of 121 sixth-form learners specifically testing scales relevant to access work; the second survey included a sample of 52 higher education students, who only responded to scales relevant to student success at higher education. These surveys also offered the option of testing slight variations to the response options, including the inclusion of a ‘don’t know’ option, which did not prove either popular or needed.

Across all these analyses, when sample sizes allowed, the analysis also looked at sub-samples of learners with characteristics similar to some of the key target groups in student access and respectively student success work. This included young people eligible for free school meals during their schooling, learners with English as an additional language, or those who were (or would be) the first in their family to progress to higher education.

Using the results from the survey validation, a preliminary set of scales and constituent items, together with questionnaire prompts and response options was assembled. These scales had good internal consistency, behaved as expected in terms of their internal structure, and were composed of items that learners of a variety of backgrounds could easily understand and answer.

Testing the scales with data from higher education providers

These scales were made available to the wider higher education sector in November 2022. Interested higher education providers (and other relevant organisations) were invited to deploy the measures in their evaluation work and return both collected data and any feedback to TASO.

A total of thirteen higher education providers and organisations returned data and/or feedback.

The data referred to over 3,000 learners, most of them responding to scales relevant to access work, but with data on all scales in the provided set. Additionally, responding providers and organisations also provided, where possible, attainment data and background information about respondents, while always protecting their anonymity.

The resulting data was analysed following similar procedures as above. Confirmation factor analyses were undertaken to explore the underlying factor structure of each respective scale – that is, to test the expectation that each scale measured one single outcome in a manner consistent with each item's meaning. Reliability analyses looked at the internal consistency of the scales, and the extent to which the items related to each other as expected. Other analyses tested the robustness of the scales, comparing between a randomly selected set of constituent items to understand if similar findings would be achieved (which they were), and yet others looked to ascertain whether the samples being employed skewed the results in any important way (they did not). Sub-group analyses like the ones carried out previously were undertaken when the data allowed, again suggesting scale behaviour that was consistent across sub-groups.

A final analytical step was to consider the relationships between each respective scale and the external measures of attainment provided by the providers and organisations engaged in this testing phase. These results met generally expected thresholds, though for one scale they were weak.

The results of the full set of analyses outlined above suggested that in these samples, most similar to what higher education providers or other organisations in the higher education sector would use, one of the scales did not meet the expected standards. A further scale showed that its internal structure was not as initially hypothesised, with one item standing separately and alone from all the others. All other scales performed sufficiently well across all expected aspects and therefore were deemed appropriate for wider use.

MAKING FINAL MINUTE WORDING TWEAKS AFTER FURTHER COGNITIVE TESTING

Considering the above results and further listening to the feedback provided by those who had tested the scales in their institutions, a further round of cognitive testing was undertaken specifically with younger learners. A total of six learners in Year 7 from a single school participated and offered their detailed feedback on the specific wording of scales and items relevant to access work.

Learners' views and feedback from participating institutions were then used to make very small tweaks to a small number of specific words in two of the access-relevant scales. Prompts were also reconsidered, to ensure further consistency, with a small number of clarity-enhancing edits made.

FINAL VERSION OF THE SCALES

The final version of the scales was then assembled, together with prompts and response options, and made available to the whole higher education sector.

Future work will continue to explore the performance of these scales across the sector, including in terms of their predictive validity, that is, in terms of how well they predict access, and respectively, success in higher education for the relevant populations.