

Executive Summary

Internal Consistency of the Test of Workplace Essential Skills (TOWES) Items Based on the Linking Study Data Set by Theresa J. B. Kline

This is the first of a series of reports associated with the psychometric assessment of the Test of Workplace Essential Skills (TOWES). In this report, the results of a series of analyses that were conducted to examine the internal consistency of TOWES items are reported. Specifically, internal consistency, item-to-total correlations, and confirmatory factor analyses were carried out.

A total of 2688 individuals took one of 15 test booklets containing a sample of the 304 TOWES items based on three subscales: Reading Text, Document Use, and Numeracy.

Using Cronbach's alpha the resulting internal consistencies were: 0.82 for Reading Text, 0.88 for Document Use, and 0.84 for Numeracy. These are certainly respectable internal consistencies, and with future revisions of the TOWES item bank these are expected to be higher.

Twenty-seven of the 304 items (9%) showed lower than expected corrected item-to-total correlations with their respective subscales. The findings from these more fine-grained analyses will assist the TOWES team to determine which of the items from this data set should be removed or revised in the future.

Confirmatory Factor Analyses (CFA) showed that 9 of the 304 items had lower than expected factor loadings on their respective subscales. In addition, the CFAs revealed that the subscales are highly correlated with one another.

Finally, a comparison of the proportion of individuals who made a correct response on the item with the items that had been dropped from an IRT analysis conducted earlier on this same data set was examined. It was concluded that about half of the items that had been dropped were very difficult. Some of the items that were dropped were the same ones that showed problems of internal consistency in the present sets of analyses.

In summary, most TOWES items demonstrated excellent internal structural relationships with the constructs they are intended to measure. The few problematic items are noted. These will be modified or dropped from further testing as TOWES continues to be subjected to rigorous psychometric assessment.