

Designing Windmills Instrument

Reliability Report

Scales for the Designing Windmills (WM) instrument were constructed from a sample of 712 students completing pre- and post-assessments (version 3/4/2010). An “All” scale was calculated as the sum of correct answers on the 30 questions. This scale was tested for internal reliability and found to have a Cronbach’s α of .759 (n=573). Question 6 was dropped for negative impact on reliability, and the new “All” scale of the remaining 29 questions had a Cronbach’s α of .775 (n=574). The table below presents the “All” and “Science” scales for the WM instrument.

Scale	N of Students	# Items	Items	Reliability: Cronbach’s α
All	574	29	1-5, 7-30	.775
Science	596	18	1-5, 7-9, 13, 14, 16, 21, 22, 24-26, 28, 29	.702