Designing Water Filters Instrument

Reliability Report

Scales were constructed using a sample of 184 students completing a pilot version of the Designing Water Filters (WF) assessment that included 34 items. Initially, we constructed a raw score which was the sum of all correct answers on all questions (AllScore). This score was tested for internal reliability and was found to have a Cronbach's alpha of .618 (n=184) with all 34 items.

The assessment was reduced to 25 items. These 25 items have reliability of .697 (n=184) and make up the version of the assessment used for the Cargill Minneapolis project. The table below lists the questions and scales from the 25-item version of this assessment (version WF-8A 9/3/10).

Scale	N of Students	# Items	Questions	Reliability: Cronbach's α	Factors Extracted
All	184	25	1-25	.697	3
Water Cycle	184	6	3, 8-11, 25	.608	1
Pollution	184	6	7, 13, 16-19	.625	2
Environmental Engineering	184	13	1-2, 4-6, 12, 14-15, 20, 21, 22-24	.517	6

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