

Exhibit 1: Psychometric Properties of the A2i Online Assessments

Word Match Game

- 2,613 test administrations and 209 individual items were used in the item response theory (IRT) analysis
- Mean item difficulty: -.38 (SD: 1.03)*
- Range of item difficulty: -3.3 to +3.5
- Overall test information: Excellent with a bell-shaped information function
- Total test information: Greater than 2.0 throughout the range of -5.0 to +5.0**

Letters2Meaning

- 2,807 test administrations and 505 individual items were used in the IRT analysis
- Mean item difficulty: -.03 (SD: 2.8)
- Range of item difficulty: -6.5 to +9.3
- Overall test information: Excellent with a bell-shaped information function
- Total test information: Greater than 2.0 throughout the range of -5.0 to +5.0

Reading2Comprehension

- IRT data collection and analyses are currently ongoing
- Preliminary results (with 1,585 test administrations and 10 individual items) suggest that the 10 items represent a range of difficulty (-1.5 to +2.3) with greater sensitivity for more skilled students (students with Theta scores in between +1.0 to +3.0)

Note. Dr. Henry May, an expert psychometrician at University of Delaware, did test scaling of the A2i online assessments by conducting series of Rasch models in IRT. Item difficulty parameters and test information of the A2i online assessments were obtained in this process. *Item difficulty and range are presented in Rasch Theta scores. **Test information greater than 2 corresponds to a reliability greater than .7 which indicates these tests produce reliable individual scores.