

TABE Validation Preliminary Results

Venette Van Duyn, Ph.D., Research Analyst

January 2009

TABE Validation Preliminary Results

Review of TABE Characteristics

- TABE has 4 subtests – Reading, Math Computation, Applied Math, Language
- Each subtest, as well as the overall test battery, yields the following statistics: Number-correct, Scale Score, Standard Error of Measurement, Grade Equivalent scores, Percentile, Stanine, Normal Curve Equivalent
- Scale scores range from 100 (poorest performance) to 900 (strongest performance); these are the ideal statistic to use for placement and interpretation. They are unaffected by the form or level of TABE administered.
- Grade equivalents should not be used for placement. Why?
 - They are dependent on the level of TABE administered
 - Overview of the levels
 - Level E – reflects content typically taught in 2nd and 3rd grade
 - Level M – reflects content typically taught in 4th and 5th grade
 - Level D – reflects content taught between 6th and 9th grade
 - Level A – reflects content taught between 9th and 12th grade
 - For example, if a student has a GE of 7.1 on the Level M Math Computation test, this does not mean that the student can do 7th grade work. Rather, this GE indicates how a student at grade 7 is performing on a test meant for 4th and 5th grade students.
 - The overall test battery Grade Equivalent is especially problematic—it is a possible for a student to have taken 4 different levels of TABE at one testing session. The overall GE score will therefore not be meaningful.

Determining Student Success

- If a “cut score” is used in a typical placement situation, students scoring higher than the cut score would be placed in a higher level class; students scoring lower than the cut score would be placed in a lower level class.
- For SCE, the goal of TABE validation was to determine a “cut score” at which, if students scored above the cut score, they could begin in the High School Lab immediately. If students score lower than (below) the cut score, they would be referred to the Learning Center.
- Before a cut score can be used, it must be shown that the assessment is strongly related to student success or student preparedness.
 - To determine student “preparedness”, the HS instructors rated students on a 1 to 5 scale, with 1 = extremely unprepared for the course, and 5 = extremely well-prepared for the course
 - Students rated by instructors with a 3, 4, or 5 were classified as “Successful” and students rated with a 1 or 2 were classified as “Unsuccessful”
- I collected a sample of 174 students that had completed the TABE, completed the student survey, and were evaluated by instructors

- Of this sample, based on instructor ratings, 149 students were successful, and only 25 students were unsuccessful

Relationship of TABE to Student Success

- Both student self-evaluations and instructor ratings were significantly related to TABE overall scale scores, as well as scale scores for the 4 subtests, with instructor ratings having the stronger relationship. This established that TABE does indeed predict student success.
- TABE had a .344 correlation with instructor ratings, which is very consistent with other research examining the ability of an assessment to predict performance. However, this correlation also indicates that only about 12% of the variance in student performance can be accounted for by TABE—that means 88% of the variance in student performance results from other factors. Despite this, the significance of the relationship means that TABE is a useful tool that enables us to predict student performance with some measure of confidence.
- The validation student sample was not large enough to establish distinct cut scores for each of the 4 subtests. Validation best supported a cut score for the overall scale score. However, student performance on the 4 subtests were highly correlated; this means that if a student scored high in one subtest, they tended to score high in the other subtests as well.
- Lastly, assessment scores more “accurately” predicted performance for students performing very strongly on TABE than for students performing poorly on TABE.

Determination of TABE Cut Scores

- Statistics were computed for a range of student TABE scale scores
- Examining the table below, the table headers include the following statistics:
- % Low Scorers Successful : this calculates the percentage of students (out of 174) who scored lower than the indicated TABE “cut score” and were still rated as “successful” by instructors. This indicates the number of students for whom TABE would suggest not be ready for High School (i.e. referred to the Learning Center), but in fact their performance was acceptable. Ideally, this percentage should be low.
- % High Scorers Successful: this calculates the percentage of students (out of 174) who scored higher than the indicated TABE “cut score” and were rated as successful by instructors. This indicates the number of students for whom TABE would suggest are ready to start high school, and indeed were rated as successful. Ideally, this percentage should be high.
- % Correctly Placed: This reflects the accuracy of TABE in predicting success. This calculates the number of students who scored below the indicated TABE “cut score” who were rated as unsuccessful (this means we were accurate in our prediction of “failure”), plus the number of students who scored above the indicated TABE “cut score” who were rated as successful (this means we were accurate in our prediction of success). Ideally, this number should be in the 70%-80% range.

- Number Eligible: this calculates the number of students who scored higher than the indicated TABE cut score. This reflects the number of students who would be able to start in the High School Lab right away, without being referred to the Learning Center.
- % Eligible: this calculates the percentage of students (out of 174) who scored higher than the indicated TABE cut score. This figure should be no less than 50%.

Validation Results:

Total students in sample = 174

Lowest score = 334

Highest score = 709

Median score = 538.5

TABE Scale Score	% Low Scorers Successful	% High scorers successful	% Correctly Placed	Number Eligible	% Eligible
300	N/A	N/A	N/A	N/A	N/A
325	N/A	N/A	N/A	N/A	N/A
350	100%	85.5%	148 (85.1%)	173	99.4%
375	100%	85.5%	148 (85.1%)	173	99.4%
400	100%	85.5%	147 (84.5%)	172	98.9%
425	80%	85.8%	146 (83.9%)	169	97.1%
450	66.7%	87.0%	145 (83.3%)	162	93.1%
475	79.2%	86.7%	135 (77.6%)	150	86.2%
500	77.3%	88.5%	125 (71.8%)	130	74.7%
510	75.5%	90.1%	122 (70.1%)	121	69.5%
515	75.4%	90.6%	120 (69%)	117	67.2%
520	76.2%	91%	116 (66.7%)	111	63.8%
525	75.0%	92.2%	113 (64.9%)	103	59.2%
550	79.0%	94.6%	91 (52.3%)	74	42.5%
575	82.0%	95.7%	68 (39.1%)	46	26.4%
600	83.7%	96.3%	50 (28.6%)	27	15.5%
625	84.7%	94.1%	40 (23.0%)	17	9.8%
650	84.9%	100%	33 (19.0%)	8	4.6%
675	85.2%	100%	30 (17.2%)	5	2.9%
700	85.5%	100%	27 (15.5%)	2	1.1%
725	85.6%	N/A	N/A	0	0%
750	N/A	N/A	N/A	N/A	N/A

Interpretation of Statistics/Recommendations

- Since the “correctly placed statistic” must be in the 70-80% range, we can first examine what score yields a correct placement of near 80% -- for example, a scale score of 450 yields a correct placement rate of 83.3%. However, this scale score is quite low, and since we know TABE doesn’t discriminate well for low scorers, this would likely allow too many students that are not ready for High School into the program.
- Examining the “cut score” of 510—this yields a correct placement rate of 70.1%, and of those scoring higher than 510, 90.1% were rated as successful in the HS program. In addition, this cut score resulted in 69.5% of incoming students being classified as ready to start right away in the curriculum. This suggests that 510 might be a useful “cut score” when making referrals to the Learning Center.
- However, we cannot make recommendations and referrals based on test scores alone; this is in violation of matriculation standards. Remember that only 12% of the variance in student performance can be accounted for by test scores!
- SCE will implement “multiple measures” – a variety of indicators, to make referrals
 - Proposed multiple measures:
 - Counseling interview (all counselors must use same questions)
 - Students self-reported ability in reading, language, math
 - College plans
 - Counselor observations?
 - Transcript evaluation (grades in relevant courses taken, recency of completion of relevant courses)

