

# TEAS V

## National Standard Setting Study 2010

### Executive Summary

The purpose of the TEAS V National Standard Setting Study was to develop a set of recommended criterion-referenced cut scores that nursing schools could adopt as benchmarks for student performance on the Test of Essential Academic Skills version V (TEAS V).

#### Methods

##### Participants

Thirty-one nurse educators were invited to participate in the TEAS V National Standard Setting Study. Of these, 27 educators were nominated by ATI sales representatives. The remaining four educators were members of the committee that helped finalize the objectives assessed on the TEAS V and helped determine the weights associated to each content area; these individuals were invited to extend their service to the Standard Setting Study. Nineteen educators accepted the invitation and 17 attended. The selected nurse educators represented PN, ADN, diploma, BSN, and accelerated BSN program types serving institutions of various sizes and types from across the United States.

ATI owes a great deal of gratitude to the nurse educators who participated in this study. As a result of their hard work and expertise, nursing programs throughout the country will now have access to criterion-referenced overall academic preparedness cut scores; these scores will provide them with the information needed to set defensible benchmarks for student performance on the TEAS V assessment.

##### Cut Score Categories

Five categories of academic preparedness were presented to the committee of nurse educators. The categories were Developmental (lowest), Basic, Proficient, Advanced, and Exemplary (highest). Working descriptions for each category were presented to the committee. The purpose of these descriptions was to differentiate among varying levels of overall academic preparedness necessary to support learning of nursing-related content (see Table 1). The committee revised these descriptions until they believed the wording would be acceptable and useful to any nursing program. According to the agreed-upon descriptions, students who achieve scores that fall into the Developmental category will generally have a very low level of overall academic preparedness. Students at this level will require additional preparation for most objectives assessed on the TEAS V. This is in contrast to students who achieve scores that fall into the Exemplary category, which will generally indicate a very high level of overall academic preparedness. Students at this level are not likely to require additional preparation.

##### Setting the Cut Scores

To determine the appropriate cut score for each category of academic preparedness, criterion-referenced cut scores were set at four levels. The first cut score represents the threshold at which students are categorized as Basic rather than Developmental. This cut score was determined using the Angoff method. The Angoff method lends itself especially well to setting a single

minimum standard. Using this method, the committee first defined the characteristics of a student who would *just* meet the academic preparedness qualifications necessary to be classified in the Basic, versus Developmental, category. This was achieved by analyzing each objective potentially assessed on the TEAS V and determining whether it would be easy or difficult for a student at that level. The committee of nurse educators then rated the difficulty of each test item as it pertained to this definition. No empirical study was conducted relating the TEAS V to performance in the first year of nursing school, nor was any study conducted demonstrating a statistical relationship between the TEAS V performance and actual job performance. The committee used the overall academic preparedness descriptions to make ratings of item difficulty. The cut score for the Basic category was derived from the mean of the item difficulty ratings. The scores below the Basic cut were categorized as Developmental.

Cut scores for the three remaining levels of overall academic preparedness (Proficient, Advanced, and Exemplary) were developed using the Bookmark method. Instead of making individual item difficulty ratings, this method allowed the committee of nurse educators to make more holistic decisions relating the difficulty of each subtest of TEAS V to the definition of overall academic preparedness assigned to each category. The test items were presented to the committee in order of difficulty for each subtest (reading, mathematics, science, and English and language usage); the easiest item was presented first and the most difficult item was presented last. The committee of nurse educators was asked to place a marker between the two items perceived to be the dividing point between students *at* and students *below* the academic preparedness category in question. Cut scores were derived from the median rating of the nurse educators.

### Use of the ATI Recommended Cut Scores

The TEAS V is designed to provide assessment data regarding a student's overall academic preparedness for nursing related content. It is intended to correlate with early program success; it is not meant to be a direct predictor of NCLEX<sup>®</sup> performance or future success in nursing. The fundamental question the TEAS V attempts to answer is, "How well is a student academically prepared for learning nursing-related content?"

Institutions using the TEAS V for high-stakes purposes (e.g. major component of the admission process) should be extremely cautious, regardless of whether or not the ATI recommended cut scores are adopted. Institutions should carefully weigh the impact any cut score choice is likely to have on their applicant and student population. ATI strongly discourages the use of the TEAS assessment as a sole criterion for admission.

Nursing education institutions should recognize that the cut scores set as a result of this study are *recommended rather than required* for those using the TEAS V. Institutions are free to use the provided cut scores or to set their own as they see fit. Please note, if choosing to use the results of this study, institutions should only select one of the provided cut scores, and refrain from making adjustments to these scores. Any adjustments to the scores cannot be supported on the basis of this study because the study was designed to set four single cut scores separating five categories of overall academic preparedness. It should be recognized that the provided cut

scores were established through a formal study in an effort to follow the recommendations of the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME) *Standards for Educational and Psychological Testing*. It is recommended that institutions wishing to set their own cut scores contact the ATI Director of Psychometrics to discuss defensible standard setting methods.

The percentage of students in each of the five academic preparedness categories shown in Table 2 was derived by applying the established cut scores to 878 nursing program applicants or recently admitted students who completed the TEAS V between November 5, 2009 and January 19, 2010. Institutions should not assume that the same percentage of students in each classification will apply to their own students when using the ATI recommended cut scores. ATI recommends that the data in Table 2 be used as a gauge for programs assessing the likely impact of choosing a given cut score. ATI also recommends that programs re-evaluate their cut scores after the test has been administered and data is available from their own students. It is helpful to review the descriptions associated with the overall academic preparedness categories (Table 1) when selecting institution cut scores.

The TEAS V score reports will report in which of the five categories students score (see Figure 1) and an explanation of these categories will appear on the explanation page of the report.

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**Table 1**

## Academic Preparedness Categories and Descriptions

<b>Category</b>	<b>Description</b>
Exemplary	Exemplary scores generally indicate a very high level of overall academic preparedness necessary to support learning of nursing-related content. Students at this level are not likely to require additional preparation for the objectives assessed on TEAS.
Advanced	Advanced scores generally indicate a high level of overall academic preparedness necessary to support learning of nursing-related content. Students at this level are not likely to require additional preparation for the objectives assessed on TEAS.
Proficient	Proficient scores generally indicate a moderate level of overall academic preparedness necessary to support learning of nursing-related content. Students at this level may require additional preparation for some objectives assessed on TEAS (see Topics to Review section of the score report).
Basic	Basic scores generally indicate a low level of overall academic preparedness necessary to support learning of nursing-related content. Students at this level are likely to require additional preparation for many objectives assessed on TEAS (see Topics to Review section of the score report).
Developmental	Developmental scores generally indicate a very low level of overall academic preparedness necessary to support learning of nursing-related content. Students at this level will require additional preparation for most objectives assessed on TEAS (see Topics to Review section of the score report).

**Table 2**

## ATI Recommended Cut Scores and Percentage of Students in Each Category

<b>Category</b>	<b>Cut</b>	<b>Percent of Students in Each Category (N = 878)</b>	<b>Percent of Students in Each Category or higher</b>
Exemplary	<b>90.7%</b>	1%	1%
Advanced	<b>78.0%</b>	16%	17%
Proficient	<b>58.7%</b>	47%	64%
Basic	<b>41.3%</b>	29%	93%
Developmental	<b>Less than 41.3%</b>	7%	100%

# Individual Performance Profile



## Test of Essential Academic Skills V Form A

Individual Name: <b>JANE DOE</b>	<b>Adjusted Individual Total Score:</b>	<b>86.0%</b>
Student Number: <b>012345678</b>	ATI Academic Preparedness Category:	<b>ADVANCED</b>
Institution: <b>ABC SCHOOL OF NURSING</b>	Mean – National	62.0%
Program Type: <b>ADN</b>	Mean – Program	65.1%
Test Date: <b>02/05/2010</b>	Percentile Rank - National:	99
# of Questions: <b>150</b>	Percentile Rank - Program:	98
Attempt: <b>2 OF 3</b>		
Days since last attempt: <b>63</b>		

**Figure 1.** Example of the top portion of a TEAS V score report indicating the ATI Academic Preparedness Category.