



TEXAS TECH UNIVERSITY
Office of the Provost

Office of Planning & Assessment

TECHQUEST

SUMMARY REPORT

FALL 2017 – SPRING 2018

INTRODUCTION

TechQuest is an assessment instrument locally developed by the Provost's Office, Core Curriculum Steering Committee, and the Office of Planning and Assessment (OPA) at Texas Tech University (TTU). TechQuest is designed to measure student learning in Foundational Component Areas (FCA) and general Student Learning Outcome objectives, as identified by the Texas Higher Education Coordinating Board's (THECB) Core Curriculum requirements between a student's first year in and completion of college. TechQuest is an adaptation of the Online Senior Assessment (OSA) which addressed areas under the Texas Core Curriculum that was effective prior to the fall 2014 academic term. The FCAs under the current Texas Core Curriculum are:

- Communication
- Mathematics
- Life and Physical Sciences
- Language, Philosophy, and Culture
- Creative Arts
- American History
- Government/Political Sciences
- Social and Behavioral Sciences

TechQuest consists of 47 total questions. In addition to demographic questions, there are 5 questions in each of the 8 Foundational Component Areas. Of those questions, one addresses a student's perceived competency in that area and the remaining four questions are content-based. Finally, six questions ask participants questions related to student learning outcomes. These questions differ from the pre-test to the post-test. In the pre-test participants are asked about what they expect to learn from their experience at Tech while in the post-test participants are asked if they felt that they did learn in each of the learning outcome areas.

When creating the new instrument, OPA staff recycled any relevant questions from the OSA and updated the content to better relate to today's students. OPA also contacted department chairs in the current core areas for assistance in creating appropriate questions on information that is currently being taught at TTU. The goal was to create questions that first year students would not necessarily know upon entrance to TTU but would be able to answer upon graduation and after being exposed to core material.

ADMINISTRATION

TechQuest is administered as a pre-test and post-test. The TechQuest pre-test was launched during the Fall 2017 semester via Qualtrics on October 11, 2017 and remained open through October 31, 2017. For the pre-test, only first-year students were invited to participate. The post-test was administered to senior students with 90 or more credit hours in the Spring 2018 semester and was open April 9 through April 30, 2018. TTU Institutional Research provided OPA with a list of eligible students, a total of 5,884 first-year students and 3,442 senior students.

OPA sent students a Qualtrics email invitation to participate in the assessment followed by periodic reminders throughout the testing periods. As an incentive for participating in the survey, one first-year participant was randomly selected to win a \$500 scholarship and two senior participants were randomly selected to win a \$500 award. As part of the data vetting process, entries that were submitted within seven minutes or less of starting the assessment were removed from the final data pool as this indicated students simply clicking through the assessment.

DESCRIPTIVE STATISTICS

After data vetting, there was an 11.24% first-year student response rate, a total sample of 661 students, and a 4.97% senior student response rate, a total sample of 170 students. The first-year sample consisted of 61% female students and 39% male students. The senior sample consisted of 69% female students and 31% male students. These numbers represent a slightly larger number of female students and fewer male students than would be expected from the population sizes, but the samples were representative in terms of college and ethnicity. The low response rate for seniors does negatively impact validity. This is possibly related to recruiting strategies and will be addressed with the next administration.

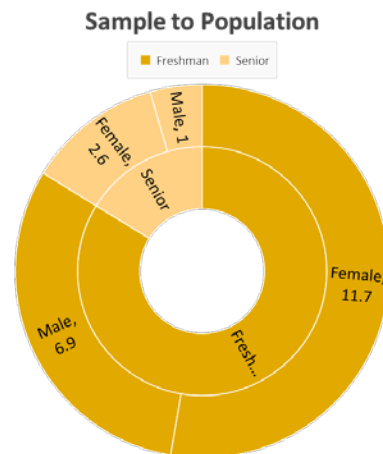


Chart 1

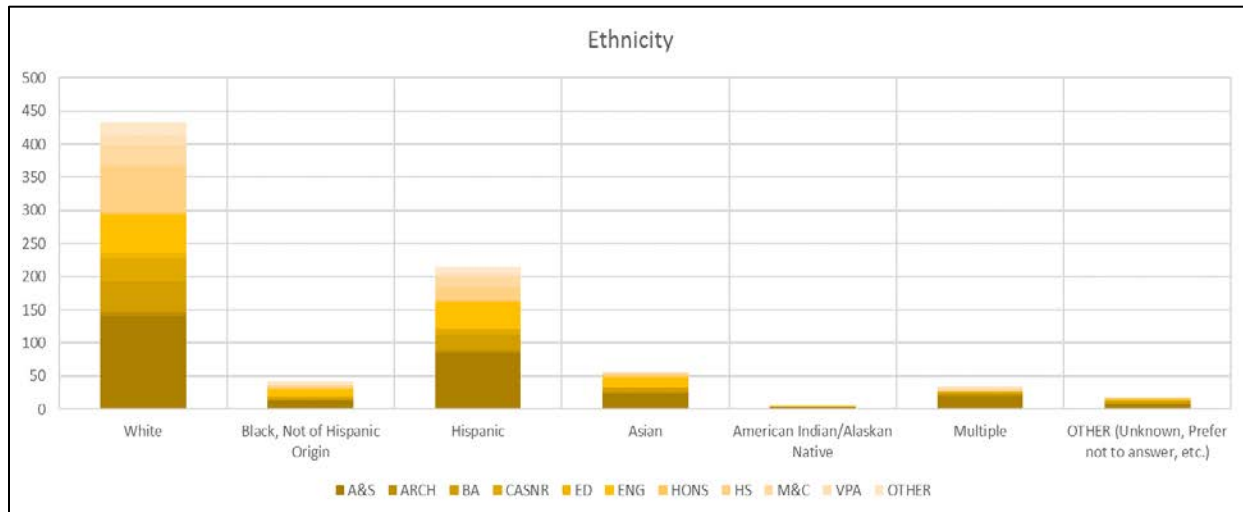


Chart 2

ANALYSIS

Direct Learning

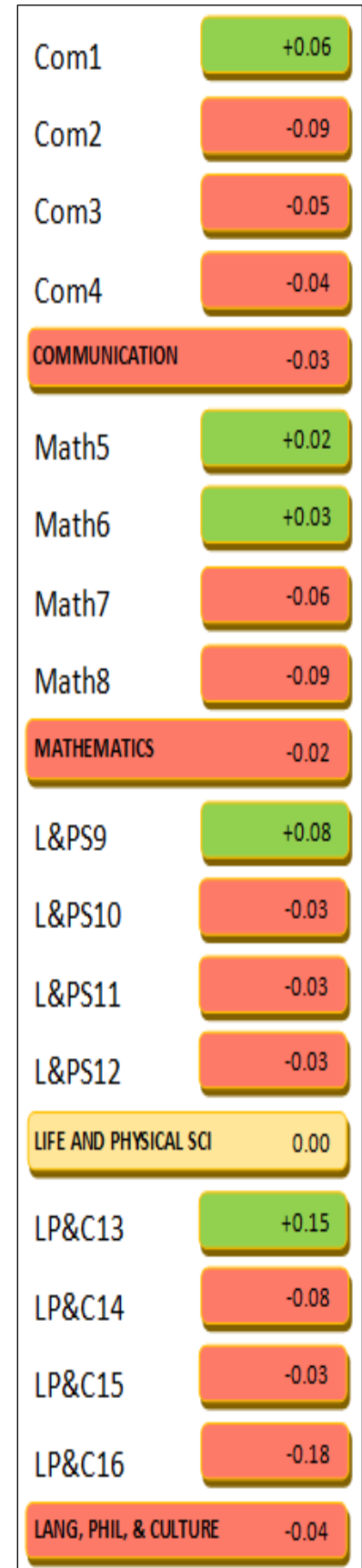
The 2017-2018 administration of TechQuest was the first year of the assessment and will be used as both a pilot and to develop baseline expectations. Pre-test results will always reflect incoming student knowledge and learning expectations. Post-test scores will eventually indicate learning gains for students that have been exposed to the current Core Curriculum. The 2017-2018 administration, however, evaluates students that have not been exposed to the Core Curriculum and is therefore not reflective of the effectiveness of the current general education curriculum. Despite the context, the analysis shows negative learning gains for all but two FCAs.



Chart 3

There are multiple possible explanations for why the scores decreased or had marginal gains. For example, the specific content had not been addressed under the previous Core Curriculum, the low response rate in the post-test invalidates the responses, or the learning was not retained. However, since this administration acted as a pilot is being used for establishing baseline data, the results do allow for measuring meaningful gains over time.

An analysis of pre-test and post-test scores for each question do indicate that there is little variable among the questions' value-added results. This could indicate that the instrument was well-developed. However, of the 32 questions that measure knowledge, there was significant variation in participant response. This analysis could prove to be most valuable for revisions and future administrations of the instrument. By looking at the distance from the mean by standard deviation, the analysis can show which questions are too easy or too difficult. For example, if a high number of first-year students answered a specific question correctly, it should be considered for revision. Likewise, if too many seniors answered the question incorrectly, it too should be considered for revision. Using shades of



red to mark standard deviations, Charts 4 and 5 demonstrate which questions should be reviewed.

First-year Scores

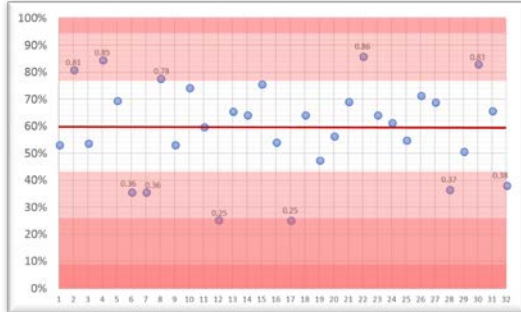


Chart 4

Senior Scores

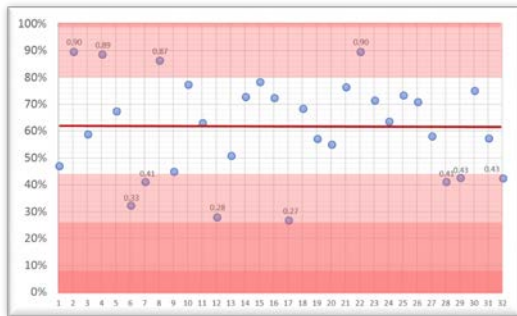


Chart 5

Questions that are possibly too easy:

- *The (thesis statement) concisely identifies the central idea of a speech and serves to connect all the parts of the speech in a single declarative sentence.*
- *Which of the following rhetorical elements are primary considerations when communicating in writing? (Audience, purpose, genre)*
- *In what year did the Civil War Begin? (1861)*
- *Which of the following statements about racial privilege is TRUE? (privilege means that some people have fewer barriers to success than other)*

Questions that are possibly too difficult:

- *According to the Cable News Network, the number of hover boards that caught fire in 2015 was 84% larger as compared to 2017. The number of hover boards that caught fire was in 2015 _____ that of 2017. (almost doubled)*
- *To determine voter attitudes, a political candidate hires a market research team. The market research team calls 100 randomly selected households in the candidate's district, and asks them, "Would you be willing to pay a little more each year so that the government can help poor, starving, abused children?" The vast majority of those called 95% said "yes". Based on these results, the political candidate reported in her next speech that "95% of my*

| | |
|---------------------------|-------|
| CA17 | -0.02 |
| CA18 | -0.04 |
| CA19 | -0.10 |
| CA20 | +0.01 |
| CREATIVE ARTS | -0.04 |
| AH21 | -0.07 |
| AH22 | -0.04 |
| AH23 | -0.07 |
| AH24 | -0.02 |
| AMERICAN HISTORY | -0.05 |
| G&PS25 | -0.18 |
| G&PS26 | 0.00 |
| G&PS27 | +0.11 |
| G&PS28 | -0.05 |
| GOV & POL SCIENCE | -0.03 |
| S&BS29 | +0.08 |
| S&BS30 | +0.08 |
| S&BS31 | +0.08 |
| S&BS32 | -0.04 |
| SOCIAL AND BEHAVIORAL SCI | +0.05 |

constituents are in favor of raising taxes to support social services." What is wrong with this? (the question itself was biased)

- *The 'linguistic turn' is associated with which perspective? (postmodern)*

Indirect Learning

In addition to participants being asked about their knowledge in specific general education requirements, participants were asked a series of questions to measure expected and perceived learning gains. These indirect questions were broken into two separate areas. Expected and perceived learning for each of the Foundational Component Areas and then expected and perceived learning for each of the student learning outcomes. The results of this aspect of the data were most interesting, especially when considering the overall negative learning gains from knowledge-based questions. Expected/ perceived learning for each of the FCAs were asked at the beginning of the knowledge-based questions. The results indicate that, for the most part, students' perceived learning was higher than their expected learning. This is a positive indication that while students have a high expectation for general educational learning gains, they feel that they received more than what they expected. However, this data is inconsistent with the results of the direct measures of learning which show negative learning gains.

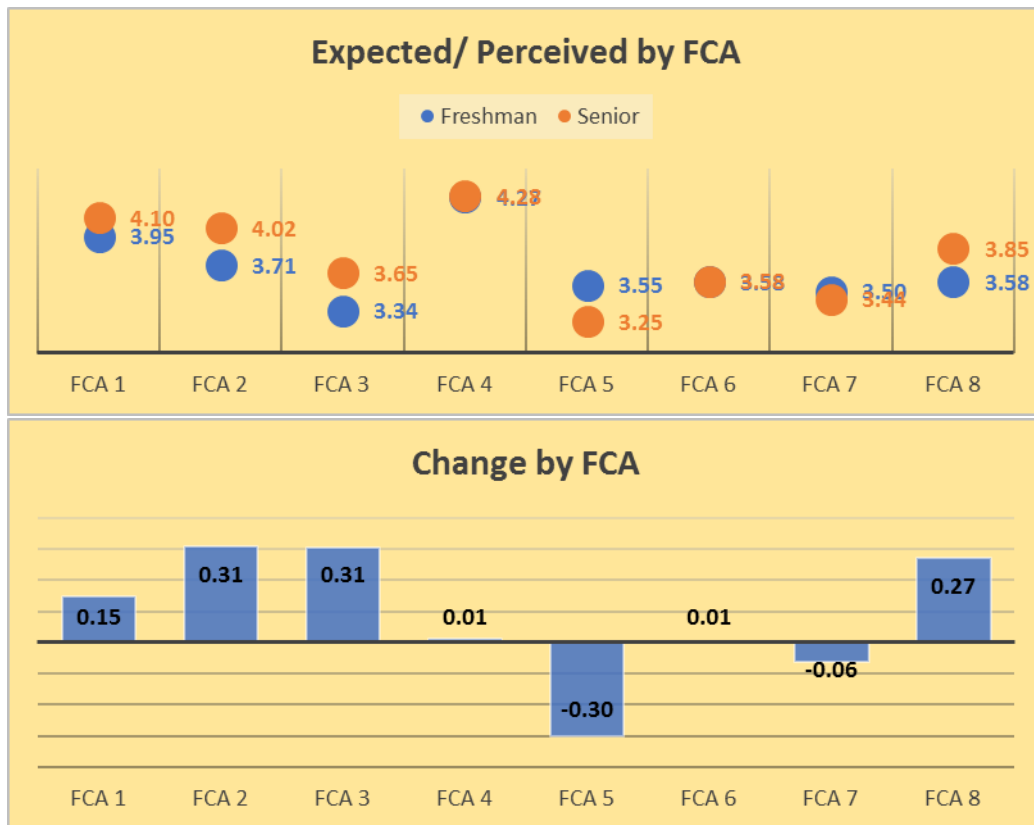


Chart 6

Furthermore, when participants were asked questions regarding expecting general educational learning gains for the THECB's student learning outcomes the results indicate that students perceived learning for these areas was significantly less than reported in the expected learning results. The most notable of these results is that first-year students expected that their least confident area for learning is with ability to solve

problems and that there most significant perceived learning relative expectations were with quantitative skills.

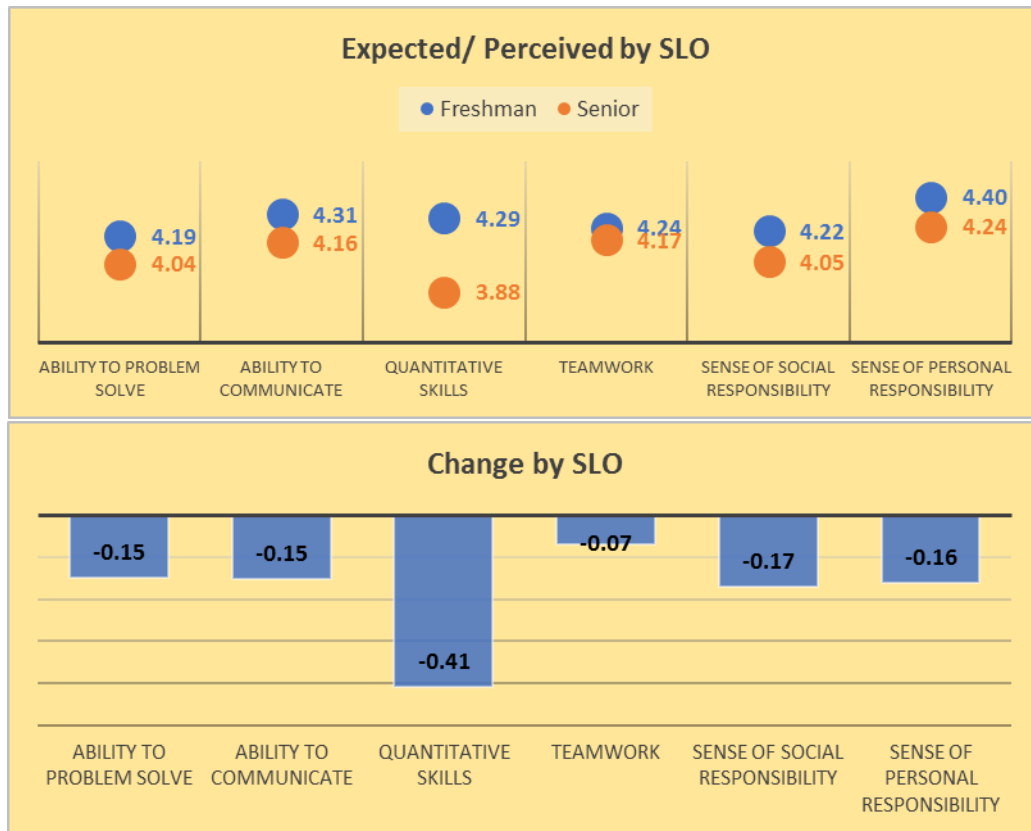


Chart 7

CONCLUSION

In its first year, TechQuest has shown to be a valuable tool for measuring student learning. However, it is how the data will be used that will determine its long-term worth. The Core Curriculum Steering Committee should carefully review the data to make improvements to the instrument, identify areas for advancing curricular goals, and discuss benchmarks for learning. The results from this assessment should not be considered the authoritative source of student learning as there are a couple of crucial limitations that were discussed. However, based on the data available the Core Curriculum Steering Committee could identify areas of strength and weakness in student learning as well as opportunities to make an impact on student learning.

For more information about the results from this assessment please contact the Office of Planning and Assessment at 806-742-1505.