TEXAS TECH UNIVERSITY
Office *of the* Provost
Office *of* Planning & Assessment™

TECHQUEST

SUMMARY REPORT
FALL 2019 – SPRING 2020

Introduction

TechQuest is a locally developed instrument created by the Office of the Provost, 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 between a student's first year in college and upon graduation as a senior. 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. OPA has also identified six student learning outcomes to assess, which are as follows:

- *Texas Tech will prepare/prepared me to be a good problem solver.*
- *Texas Tech will prepare/prepared me to be a better communicator, specifically as it relates to my major.*
- *Texas Tech will prepare/prepared me to have the quantitative skills needed for after graduation.*
- *Texas Tech will prepare/prepared me to work in teams, specifically as it relates to my major.*
- *Texas Tech will prepare/prepared me to have a greater sense of social responsibility.*
- *Texas Tech will prepare/prepared me to have a greater sense of personal responsibility.*

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 knowledge-based. Additionally, first-year students will answer based on their expectations of learning upon graduation whereas senior students will answer based on their perceptions of learning upon graduation.

Instrumentation

TechQuest was administered to first-year and senior students during the 2019-2020 academic year. TTU Institutional Research provided OPA with a list of eligible students, a total of 16,369 first-year and senior students. OPA sent students a Qualtrics email invitation to participate in the assessment followed by periodic reminders throughout the testing period. During the Fall 2019 semester, the survey was administered to first-year students and was available October 14th, 2019 through November 14th, 2019. As an incentive for participating in the survey, two first-year participants were randomly selected to win a $500 scholarship toward tuition and fees for the Spring 2020 semester. For the Spring 2020 semester, the survey was administered to senior students and was available March 30th, 2020 through April 30th, 2020. As an incentive for participating in the survey, one senior participant was randomly selected to win a $1,000 scholarship toward tuition and fees for the Spring 2020 semester.

As part of the data vetting process, entries which 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. By eliminating participants under the minimum length of survey time, this drastically decreased the data pool used for this report. After data vetting, we received a total sample of 215 students, resulting in a response rate of 1.95% for first-year students and 1.01% for senior students. The low response rate does negatively impact validity. This could be attributed to the impact COVID-19 had on the institution during the spring 2020 semester, but also presents an opportunity for OPA to reevaluate its marketing strategy to increase participation.

Descriptive Statistics

The first-year sample consisted of 69.83% female students and 30.17% male students. The senior sample consisted of 70.71% female students and 28.28% male students. These numbers represent a slightly larger number of female students than is typical of the TTU student population, and not all colleges were represented in the sample size. Charts 1 and 2 summarize the sample demographics by gender, college, and ethnicity.

Chart 1: Ethnicity by College

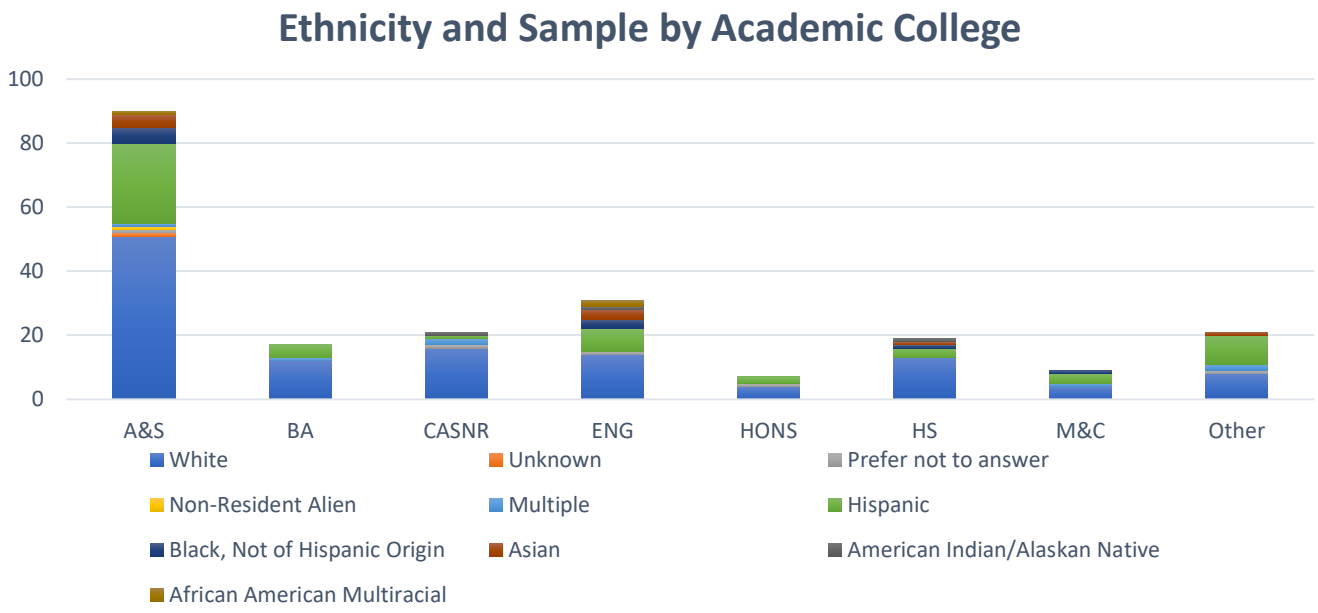
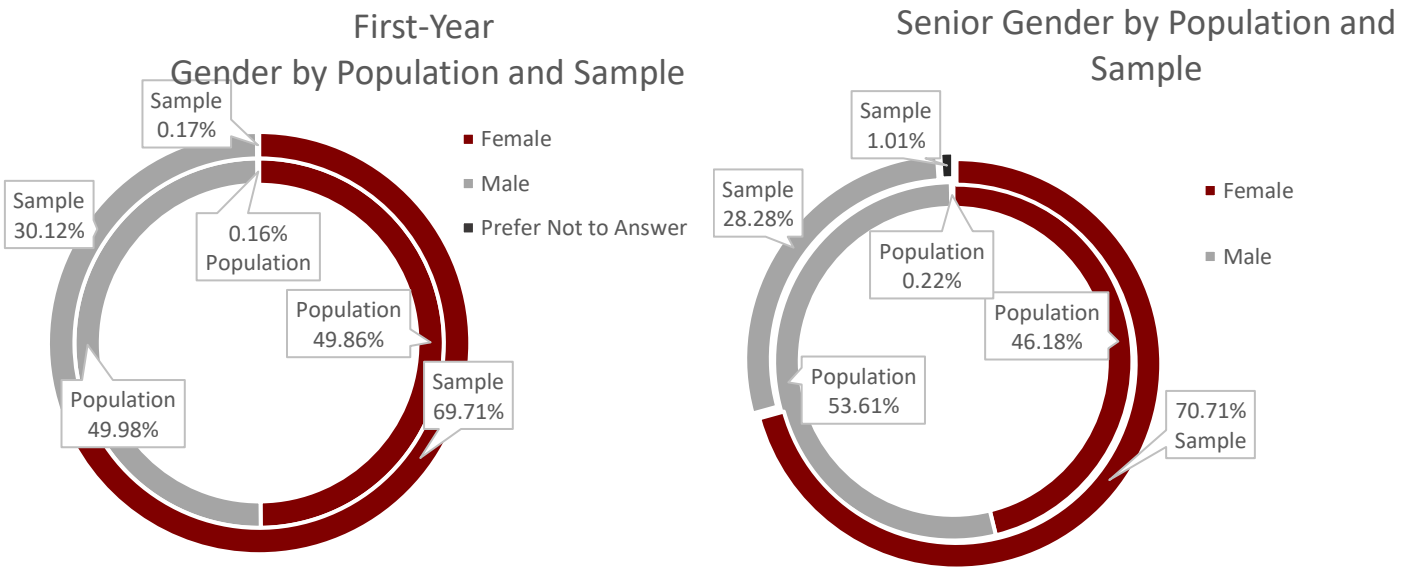


Chart 2: Sample and Population by Gender



Direct and Indirect Learning Analysis

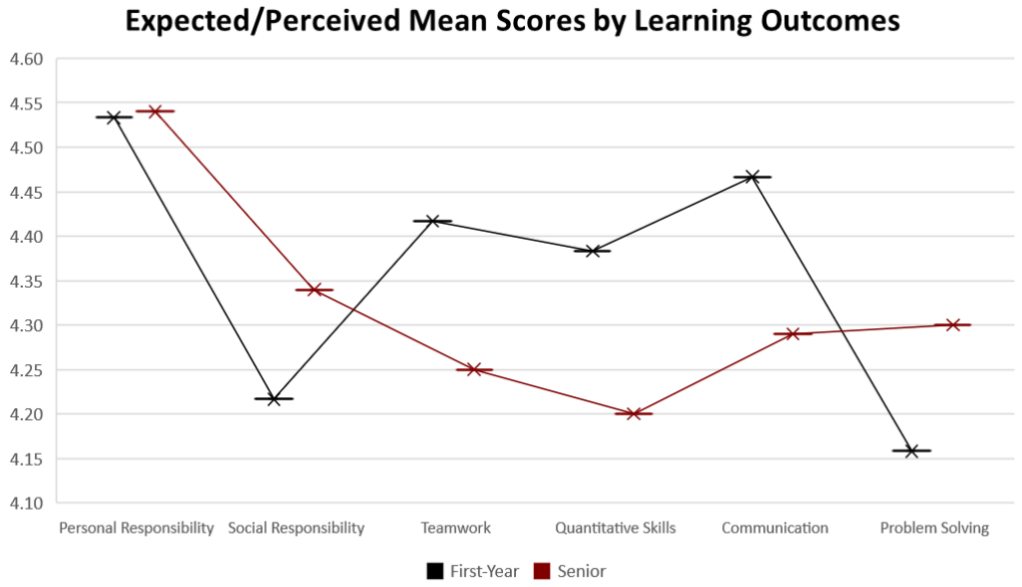
This was the second year of the TechQuest assessment and the data from this year along with data from the previous administration will be used to develop baseline expectations. Pre-test results will always reflect incoming student knowledge and learning expectations. Post-test scores will ideally indicate learning gains for students that have been exposed to the current

Core Curriculum. The current administration is the first administration of TechQuest to evaluate students that have been exposed to the Core Curriculum and is reflective of the effectiveness of the current general education curriculum.

In addition to questions about their knowledge of general education requirements, participants were asked a series of indirect questions to measure expected (first-year students) and perceived (senior students) learning. First-year students were asked to what degree they feel Texas Tech *will prepare* them in each area, whereas senior students were asked to what degree they feel Texas Tech *prepared* them in each area. The results of this aspect of the assessment were most interesting, especially when considering the overall positive and negative learning results from knowledge-based questions. The results indicated that students' perceived learning for these areas were above or just slightly under those reported in the results of expected learning. This indicates that overall, students' knowledge gains and their expectation of learning upon initially entering Texas Tech University are consistent.

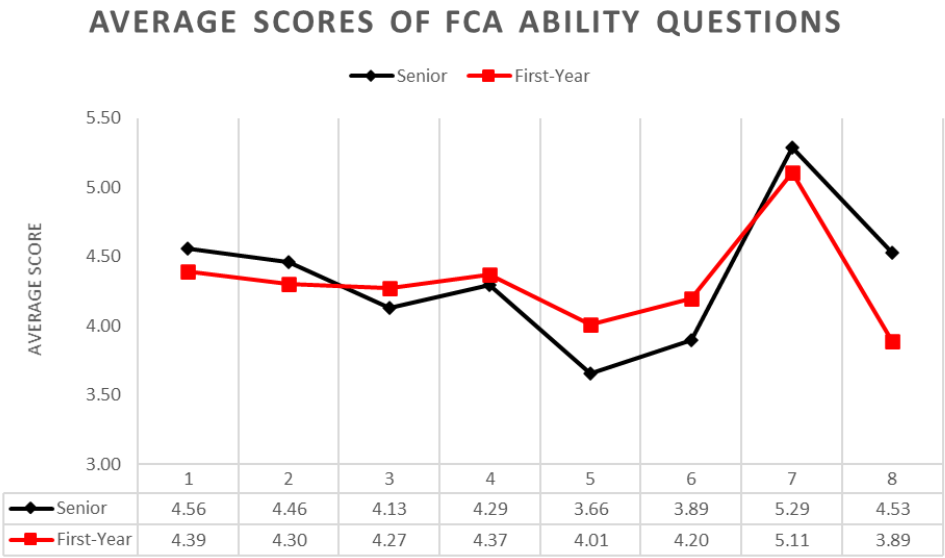
Students were also asked to self-report their perceived ability for TTU to prepare them in six learning outcomes. As shown in Chart 3, the most notable of these findings is that first-year students reported their least confident area for learning to be "ability to problem solve," whereas the most significant change or growth in perceived learning outcomes was problem solving and social responsibility. The chart shows a decrease from first-year students' expectations for preparation in teamwork, quantitative skills, and communication upon entering TTU to senior students' perception of their preparedness in those areas upon graduation.

Chart 3: Comparison of Learning Outcome Means



First-year and senior students were also asked to rate their ability to answer general education questions in each of the eight FCAs at the beginning of each section. It is possible the COVID-19 pandemic impacted these self-reported perceptions for senior students, as day-to-day instruction and the overall environment of the institution were disrupted to ensure the safety of students. Chart 4 below summarizes the average scores, by classification, of FCA ability on a 5-point Likert scale.

Chart 4: Comparison of average FCA ability questions by classification

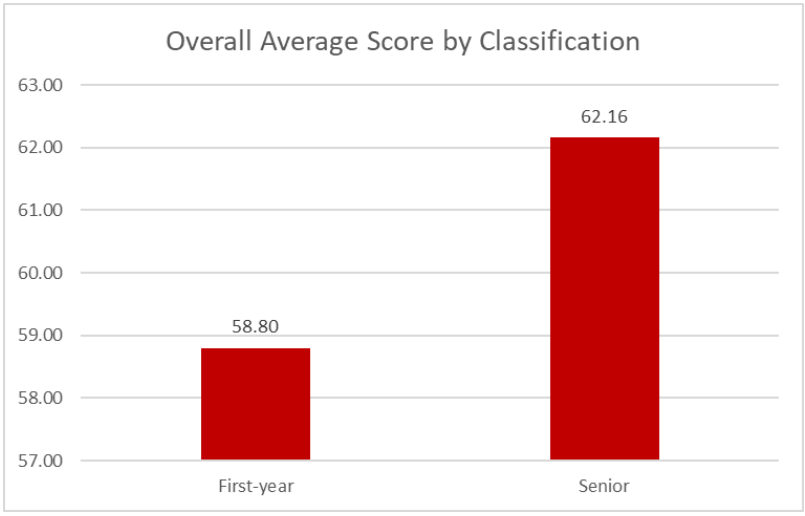


	1	2	3	4	5	6	7	8
Senior	4.56	4.46	4.13	4.29	3.66	3.89	5.29	4.53
First-Year	4.39	4.30	4.27	4.37	4.01	4.20	5.11	3.89

- **FCA 1: Communication**
- **FCA 2: Mathematics**
- **FCA 3: Life and Physical Sciences**
- **FCA 4: Language, Philosophy, and Culture**
- **FCA 5: Creative Arts**
- **FCA 6: American History**
- **FCA 7: Government/Political Science**
- **FCA 8: Social and Behavioral Sciences**

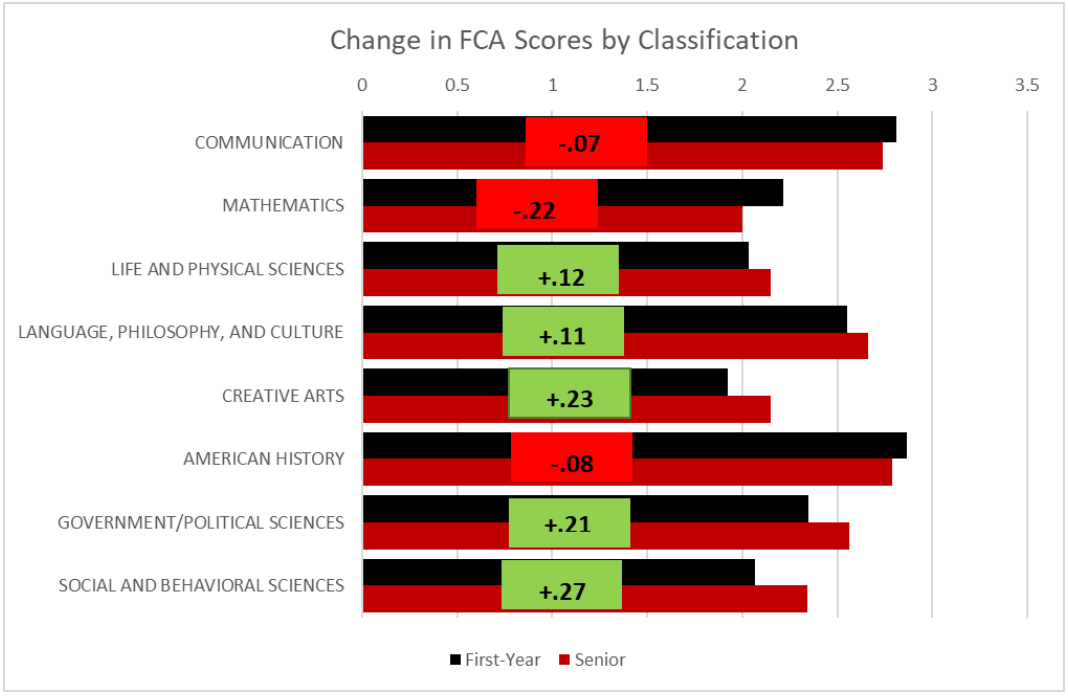
Scores for the direct questions in each of the Foundational Component Areas were analyzed to show the learning gains in each of the general education areas of the Texas Core Curriculum as well as the change in overall performance in first-year and senior students. Chart 5 shows the overall average score by classification, demonstrating an increase of 3.36 in overall average scores upon students entering and exiting TTU.

Chart 5: Overall Average Scores by Classification



Additionally, scores were analyzed to show the overall change in individual FCA score between first-year and senior students, as shown in Chart 6. The majority of FCA scores demonstrated learning gains upon exiting TTU, with a notable exception being the score for the Mathematics component area, which showed a decrease of .22 from first-year to senior. This information could present an opportunity to look further into the Mathematics core courses to understand why students did not experience a learning gain.

Chart 6: Change in FCA Scores by Classification



Data were also analyzed to show overall performance by academic college for first-year and senior students. The overall performance scores indicate that the College of Agricultural Sciences & Natural Resources, College of Arts & Sciences, and College of Business experienced an increase in scores whereas the remaining colleges saw a decline in overall performance. As addressed earlier in this report, the low response rate does negatively impact validity, and some colleges are not represented in the sample. Overall average scores by academic college are summarized in Chart 7 and Chart 8.

*Chart 7: First-Year overall average scores by college (*no COE or VPA represented due to small sample size)*

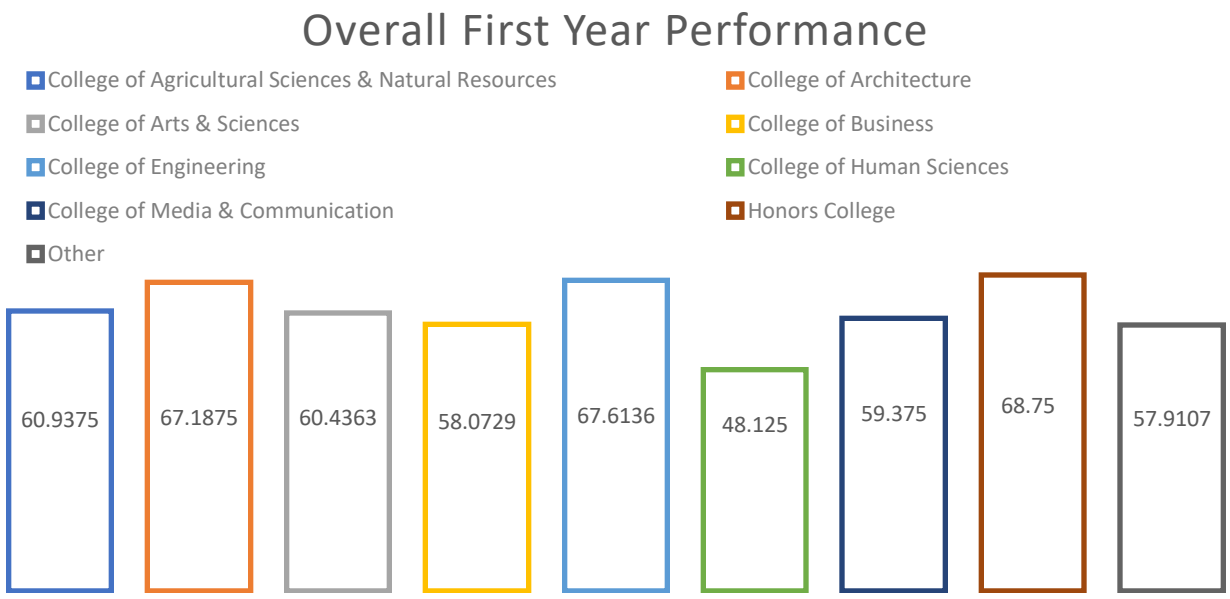


Chart 8: Senior overall average scores by college

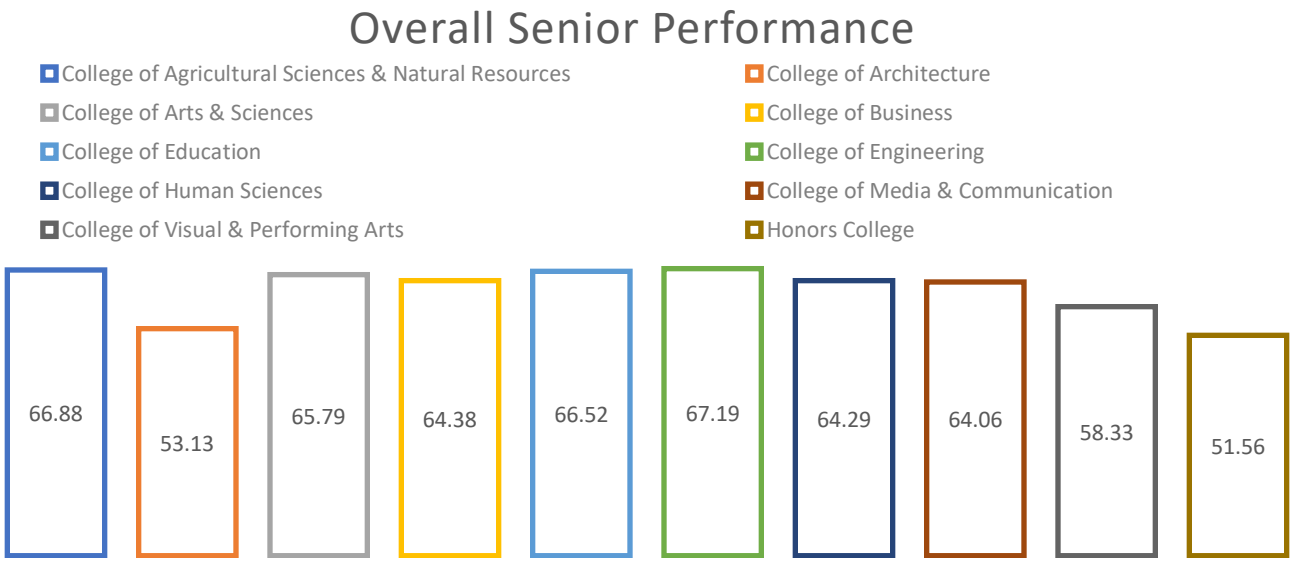


*Chart 9: First-year overall average scores by college (*no COE represented due to small sample size)*

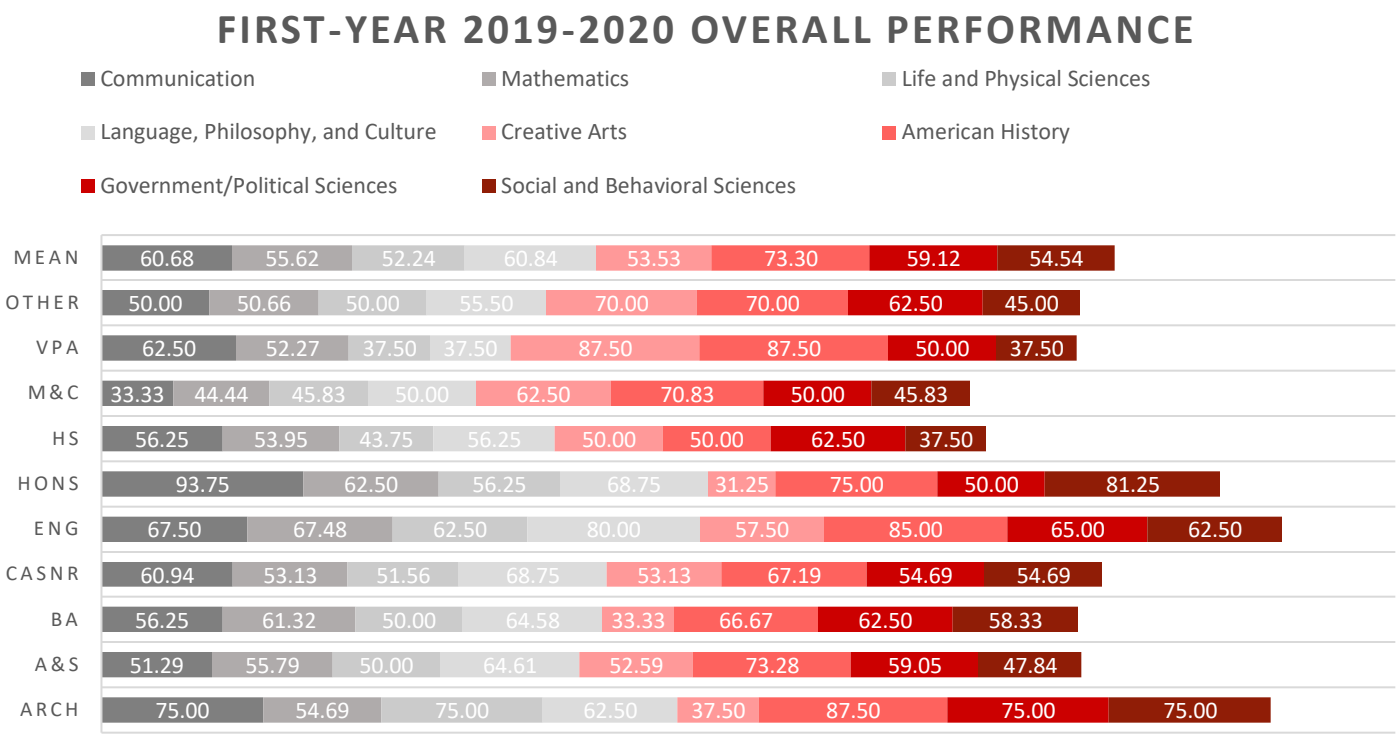
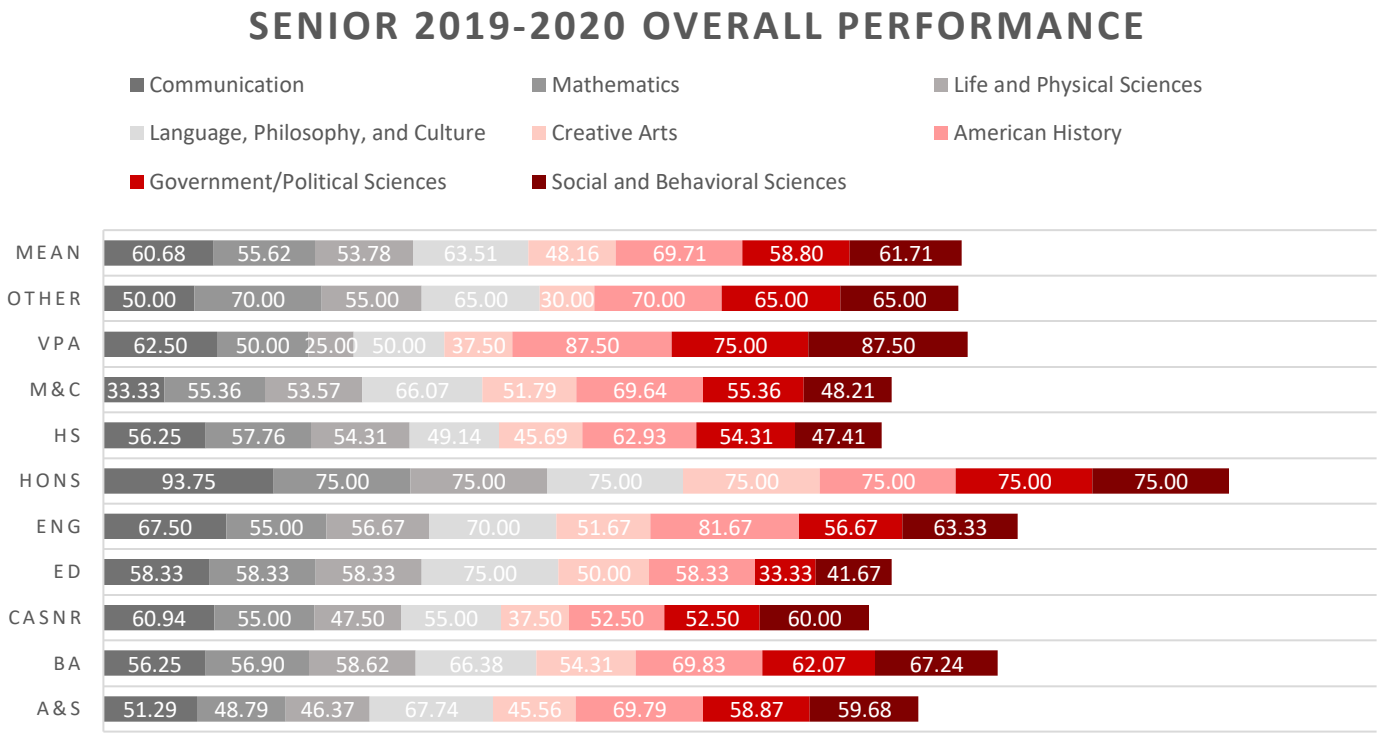


Chart 10: Senior overall average scores by college



Conclusion

In its second year, TechQuest has proven to be a helpful tool for measuring student learning as it relates to the Texas Core Curriculum. The Core Curriculum Steering Committee should continuously review 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 strengths and weaknesses in student learning as well as opportunities to make an impact on student learning.

An area of improvement that has been noticed is a decline in student participation from the pilot year of the assessment to the current administration. OPA will reevaluate its marketing strategy to improve student participation rates, especially regarding assessment submissions that are deemed valid and reliable. One of these considerations could be offering more incentives of lower value to see how that affects student responses or including completion of the assessment as an assignment in freshman and senior seminar courses. These changes will be discussed and possibly implemented before the next administration of TechQuest in 2021-2022.

For more information about the results from this assessment, please contact Ashley Pruitt in the Office of Planning and Assessment at 806-742-1505 or ashley.pruitt@ttu.edu