

General Education Competency Assessment Report for Blue Ridge Community College 2021-2022: Professional Readiness and Critical Thinking

This assessment report is to fulfill the State Council for Higher Education in Virginia's Policy on Student Learning Assessment and Quality in Undergraduate Education.

General Education Philosophy at BRCC

Blue Ridge Community College's general education offerings intentionally strive to develop a liberal arts perspective. The program exposes students to a broad body of knowledge of the major social, cultural, historical, and scientific forces that have shaped human identity and the world. General education enables students to integrate knowledge to address fundamental questions about the nature of the world and its inhabitants. Blue Ridge Community College believes general education is an important component for all students whether they are going immediately into the workforce or continuing their education.

As a part of the VCCS, Blue Ridge Community College adheres to the VCCS General Education Policy in selecting and defining general education competencies. The General Education Policy states that "upon completion of the associate degree, graduates of Virginia's Community Colleges will demonstrate competency in student learning outcomes (SLOs) determined and assessed by each college in 1) civic engagement, 2) critical thinking, 3) professional readiness, 4) quantitative literacy, 5) scientific literacy, and 6) written communication." (p. 1). The competencies are defined as follows:

Civic Engagement is the ability to contribute to the civic life and well-being of local, national, and global communities as both a social responsibility and a life-long learning process. Degree graduates will demonstrate the knowledge and civic values necessary to become informed and contributing participants in a democratic society.

Critical Thinking is the ability to use information, ideas, and arguments from relevant perspectives to make sense of complex issues and solve problems. Degree graduates will locate, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

Professional Readiness is the ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education.

Quantitative Literacy is the ability to perform accurate calculations, interpret quantitative information, apply and analyze relevant numerical data, and use results to support conclusions. Degree graduates will calculate, interpret, and use numerical and quantitative information in a variety of settings.

Scientific Literacy is the ability to apply the scientific method and related concepts and principles to make informed decisions and engage with issues related to the natural, physical, and social world. Degree graduates will recognize and know how to use the scientific method, and to evaluate empirical information.

Written Communication is the ability to develop, convey, and exchange ideas in writing, as appropriate to a given context and audience. Degree graduates will express themselves effectively in a variety of written forms.

Furthermore, BRCC complies with the VCCS General Education Policy by assessing each of the six competency areas outlined above in accordance with SACSCOC accreditation standards and SCHEV policy.

General Education Assessment

The approach to assessment at BRCC is based on the idea that no single instrument or process captures the breadth and depth of general education, and that a robust assessment plan contains multiple strategies. We use direct course-embedded measures of student work through processes within our career/technical and transfer program coursework. We also administer standardized direct assessments of general education to graduating students and/or use indirect measures such as surveys and participation, depending on the competency. Our assessment process considers four components:

General education outcomes in major content coursework

All associate degree programs have a general education core defined by distribution requirements. The general education coursework core of the Associate of Applied Science (AAS) degrees is small in proportion to the major coursework. AAS programs such as Nursing, Veterinary Technology, Business, and Aviation are roughly proportioned at 15 credits general education to 45 credits major coursework. While the introductory level courses in composition, math/science, humanities, and social science provide the fundamentals, the important information for program improvement is to know how students perform in key general education outcomes within the context of their major coursework. Are nursing students writing well in their nursing coursework, following the conventions of their discipline? How does critical thinking factor into the decision-making process in business? Questions like these are addressed by this piece of the package.

For our career/technical (AAS) programs, we ask each year that as part of the program's overall general education assessment strategy, they perform a course-embedded assessment of a designated competency for that year. **For this report, all AAS program heads were asked to identify a program course for 2021-22 in which they would assess the Professional Readiness competency using student work in that course.**

General education outcomes in general education coursework

The Associate of Arts and Sciences (AA&S) and Associate of Science (AS) awards are transfer oriented and have a general education core of 30 or more credits. Students in these programs may be in any of several hundred courses fulfilling either general education or transfer elective requirements, and the courses themselves will have a mix of AA&S, AS, and AAS students enrolled. A system centered on coursework in the major didn't make sense here, so we instead used the distribution requirements as general education "clusters" with associated outcomes – an idea we picked up from our neighbors at JMU.

The cluster areas for assessment purposes are (1) English composition and literature, (2) fine arts and humanities, (3) mathematics, (4) science, and (5) history and social sciences.

Each cluster area is assigned a faculty leader who is responsible for coordinating the assessment of general education competencies in courses in their cluster. Each cluster lead works with faculty teaching designated courses each year to determine an appropriate artifact for assessment that demonstrates at least some of the outcomes associated with that cluster.

Cluster leads and the faculty General Education Assessment Coordinator form the assessment team and score artifacts across all clusters. AAC&U style rubrics for each outcome have been developed and are written broadly enough to be applicable to various works. As part of the scoring process, the group notes strengths and weaknesses and possibilities for improving student performance. The cluster leads share the initial assessment reports with the course faculty and ask them to pick one thing to work on for the following year and produce an action plan. Action plans have included revising existing assignments, creating new assignments to better align with outcomes, and creating new course activities to better support assignments.

In the following year, the courses go through a second round of assessment to see if changes in student performance have occurred after the action plan has been implemented. A comparable selection of student work is taken for scoring, and at the end of the process, the course faculty receive a detailed report of the whole two-year process from start to finish.

There is no set schedule for assessing each competency at the general education course level. We assess multiple competencies each year in various general education courses. This doesn't mesh well with the common scheme of designating a competency every year to *assess*, but we've worked around that: each year, we have a designated competency to *report on*, and we'll usually report on the past three or four years of cluster-related activities surrounding that competency. **Professional Readiness was a challenge to the cluster structure however (more on that below) and we are approaching that assessment differently than usual.**

Institutional level assessment with external benchmarks

Course-embedded assessment in our general education and major content courses is a way of gathering information that is meaningful and actionable for faculty. We added these processes to our assessment package to address a weakness that is inherent in standardized graduation assessments of general education: well-designed summative assessments of general education are written in a way that performance should not be dependent on a particular course. This makes sense as a broad measure of what students can demonstrate by the end of a program, but it's not particularly helpful when you are asking faculty to make use of assessment data to inform strategies for improvement. These instruments don't provide information at that level.

They do have a use however, which is why we opted to supplement them with other measures instead of replacing them when the VCCS schedule of assessments was discontinued. Course-embedded assessment does not provide external benchmarks – faculty end up comparing student performance to benchmarks they set themselves, and it's not surprising that those benchmarks are frequently “met.” Standardized assessments give us benchmarks outside ourselves to compare and the results of these graduation assessments can alert us if something is seriously off at the program level. **Each year, graduating students are required to complete an assessment; for 2021-22, the competency was Critical Thinking, and the instrument was the *Test of Everyday Reasoning (TER)* from Insight Assessment.**

Special projects

Finally, in some years we may have a special project in a competency. These will vary from year to year – for example, in the year we looked at Civic Engagement, we included a report on our Blue Ridge Pass program, which engages students in campus and community activities. **This year, assessment of oral communication in CST 110 as part of Professional Readiness is outside our usual cluster structure and has some historical data associated with it as well.**

Assessment schedule

BRCC will assess the general education competencies on a three-year cycle, reporting on two competencies per year. One of those will be the institutional-level graduation assessment, and for each of these, we have designated the instrument. The other competency will be assessed using the course-embedded approaches described above. Career/technical programs will contribute to the assessment of the themed competency for that year, and summary reports will be provided for the recent activity of the general education clusters in that area.

Instruments:

- Written Communication: *IntelliMetric Written Communication Assessment*, McCann
- Civic Engagement and Professional Readiness: *Personal and Social Responsibility Inventory (PSRI)*, Iowa State University
- Quantitative and Scientific Literacy: *Quantitative Reasoning Test (QR)* and *Scientific Reasoning Test (SR)*, Madison Assessment
- Critical Thinking: *Test of Everyday Reasoning (TER)*, Insight Assessment

Competency	Cycle 1			Cycle 2		
	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Written Communication	Embedded			Graduates (McCann)		
Civic Engagement	Graduates (PSRI)			Embedded		
Quantitative Literacy		Embedded			Graduates (QR)	
Scientific Literacy		Graduates (SR)			Embedded	
Professional Readiness			Embedded			Graduates (PSRI)
Critical Thinking			Graduates (TER)			Embedded

Competency: Professional Readiness

Professional Readiness is the ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education.

- **PR1:** Share information and understanding verbally in a clear and coherent manner appropriate for various audiences and consistent with workplace expectations (Oral Communication)
- **PR2:** Collaborate effectively in teams or groups to complete a task or project (Teamwork)
- **PR3:** Demonstrate proficient use of a tool and/or software in the context of a task or project (Technology Use)
- **PR4:** Demonstrate ability to complete a complex multi-part or multi-step task (Organization and Planning)

The VCCS decision to adopt the Professional Readiness competency created a challenge for the general education assessment team. Incorporating the competency into the “general education outcomes in major content courses” didn’t appear to be a problem; in the same way that we can expect Written Communication, Quantitative Literacy and Critical Thinking to manifest in course assignments in Nursing or Vet Tech, we expected to find examples of oral presentations, teamwork assignments, and other components that fall under the more behavior-oriented focus of this competency.

However, the “general education outcomes in general education courses” assessment framework relies on the idea that while general education competencies land in all courses, there should be some agreement as to which distribution areas consistently act as providers of specified competencies. This provides a rationale as to why we have distribution requirements in the first place, and why we tell our students that they can pick a science course out of a bucket of science courses and have any one of those courses play the same role. Our initial process involved teasing out just what it was that was provided by the science bucket, what was provided by the social sciences bucket, the humanities bucket, and so forth. These outcomes are what each General education Cluster has ownership of.

Professional Readiness...didn’t fit. We can find assignments where students demonstrate those skills spread across the general education curriculum, but it varies at the instructor level. We might find a math professor who incorporates group projects into all their courses, or a social sciences professor who requires presentations, but there is no one distribution area whose job it is to provide the skills covered in PR1-PR4 where we could find associated student work in every section of every course in the bucket.

With one notable exception: CST 110 (Introduction to Human Communication). This course meets a core requirement of both our AA&S and AS programs. It has a high enrollment (218 students in Fall 2021) and multiple (12) sections in all modalities (virtual, FTF, and hybrid). It provides an obvious source for the oral communication outcome PR1. **Assessment of oral communication in CST 110 became a special project for the cluster assessment team.**

Professional Readiness within general education coursework – a special project with CST 110

This part will differ from past years, since for our general education cluster assessment, we usually don't have a selected competency to assess every year. What we've been doing to work our process into an annual reporting structure is picking a themed competency to *report on* instead, and we summarize the past few years of activity and projects surrounding that competency. In 2021-22, all our typical assessment activity was still going on, with clusters working in all the other competencies, but in addition to that, the Humanities cluster lead began additional work on a project involving CST 110 (Introduction to Human Communication).

Underlying the summary score for PR1 is the NCA [National Communication Association] Competent Speaker Speech Evaluation Form, which provides the opportunity to look more closely at the components of a speech. Then we have some historical data: Oral Communication was the VCCS General education competency that was scored statewide in Spring 2013 with the NCA Rubric, using a team of Communication faculty from across the system. We also have some local BRCC scores from that assessment.

This was of interest to our CST 110 faculty, some of whom had been around for the VCCS assessment in 2013 and had participated in the scoring at the state level. Faculty were curious to see what this could reveal about the way an assessment is conducted affects the scores. The 2013 participants were pulled at random from graduating students and may or may not have completed CST 110 as part of their program. They were given a prompt and directed to prepare a speech, knowing that while they had to do *something* to fulfill the graduation requirements, there was no grade attached and it didn't need to be done well. A few openly expressed resentment at being required to do this to graduate! Now we'd be looking at student performance using a similar assignment and the same rubric but done within a class and for a grade.

The assessment process

The plan was to randomly select 50 student works directly from across all sections of CST 110. This was a tricky assessment to pull together, since the options for delivery modalities have expanded so much and we needed individual faculty to record the speeches, and the Humanities cluster lead to make them accessible to the scorers. We ended up with 31 usable submissions. Prompts varied, and the only thing the faculty agreed on was to record and submit either a persuasive or informative speech from each selected student.

Each work was scored by three raters: one rater was the instructor, while the other two were members of the assessment team. The Humanities and Fine Arts cluster lead is also a CST 110 Instructor and was able to walk the team through the NCA Rubric and lead the calibrating exercises. The scale only allows for three ratings: 0 (Unsatisfactory), 1 (Satisfactory), and 2 (Excellent). The average score for each student was recorded, and then the means over all students for each competency were calculated. We then translated more granular NCA rubric into an overall PR1 score. All the Professional Readiness rubrics appear at the end in Appendix A, and the NCA Rubric is included there as well.

What we found...

Overall, the student speeches were very well done. Roughly half the students had no unsatisfactory components at all, while the other half had a 0 on one or two out of the eight NCA competencies. Discussion centered on the more detailed NCA breakdown and the areas of relative weakness – the full NCA Rubric and mean scores can be found in *Appendix B: Professional Readiness Data Details*.

On the NCA rubric, the competencies that the students struggled the most with involved maintaining interest through vocal variety and having a strong organizational pattern; the team noted that introduction, body, and conclusion sometimes ran together with awkward transitions. The strongest areas were appropriate topic choice and language. Raters agreed that the topic and language choices were mostly well-suited to their peers' audience.

PR1 summary score		
Score	Number	%
0	0	0%
1	0	0%
2	16	52%
3	12	39%
4	3	10%

A score of "2" indicates uneven performance but an overall impression of competence with few unsatisfactory areas. A score of "3" indicates satisfactory or better performance on every area of the NCA rubric.

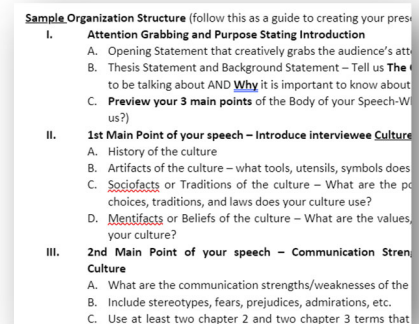
It was interesting to compare with the scores from the 2013 assessment, because it confirmed something we take for granted when writing up assessment reports – that the key limitation of those graduation assessments not completed for a grade is that they are “low-stakes.” Students are assumed to be underperforming since there is no penalty for a cursory attempt. This just put some numbers on how bad “low-stakes” can be. The mean score across all components was 1.4 (on that 0-1-2 scale), while in 2013, at both BRCC and the VCCS, the mean score was 0.8. The prompt was for an informative speech on educational and career goals, and the scoring conditions weren’t all that different. Nobody believes the large jump in score is due to instructional improvements; it’s all about the conditions under which the students were asked to perform.

Going forward

One thing that came out as the assessment team went through the speeches was the variability in prompts, not so much the topic but the level of organizational detail provided by course faculty. Some of the assignment prompts modeled best practices in assignment design with their transparency, details, and example language and structure, and the lead will share these out with CST faculty.

The CST faculty had dinner together in early November to discuss the assessments from Spring 2022 and decided to work on vocal variety in Spring 2023. They had numerous suggestions about how to help students improve their vocal variety which they will incorporate into their instruction. The CST faculty drafted a five-step process for Spring 2023:

- 1) Each CST110 faculty member will make improving the vocal variety in pitch, rate, and volume to heighten and maintain interest in an audience a primary goal of teaching, learning objectives, and student improvement.



Sample Organization Structure (follow this as a guide to creating your presentation)

- I. **Attention Grabbing and Purpose Stating Introduction**
 - A. Opening Statement that creatively grabs the audience's attention
 - B. Thesis Statement and Background Statement – Tell us **What** you are talking about AND **Why** it is important to know about
 - C. **Preview your 3 main points** of the Body of your Speech-Why are these important?
- II. **1st Main Point of your speech – Introduce interviewee Culture**
 - A. History of the culture
 - B. Artifacts of the culture – what tools, utensils, symbols does your culture use?
 - C. **Sociofacts** or Traditions of the culture – What are the practices, traditions, and laws does your culture use?
 - D. **Mentifacts** or Beliefs of the culture – What are the values, attitudes, and beliefs of your culture?
- III. **2nd Main Point of your speech – Communication Strengths and Weaknesses of the Culture**
 - A. What are the communication strengths/weaknesses of the culture?
 - B. Include stereotypes, fears, prejudices, admirations, etc.
 - C. Use at least two chapter 2 and two chapter 3 terms that you learned about in your research.

- 2) This goal will be communicated to the students in the first class of the semester and reminded before every speech delivery presentation both in class and in announcements on Canvas.
- 3) Faculty will use 3 specific teaching/learning strategies through the semester to seek to improve vocal variety. These strategies will be reported on in an end of semester meeting.
- 4) Faculty will count vocal variety as a double portion of the grade for each speech delivery to communicate the importance of it in the speech for the student.
- 5) At the end of the semester, faculty will use a rubric that they are developing to report on each student's improvement in vocal variety.

Bring in children's books and have students read them in an engaging fashion. Give a speech someone else wrote so they're not working on so many facets of public speaking. Have students critique live speeches such as TED Talks, sermons, and formal speaking events. Use speech game activities that focus on vocal variety.

This project has brought more than a dozen CST faculty together to discuss and compare strategies and highlights the value of assessment in giving everybody a focus to organize around.

Professional Readiness within Career/Technical (CTE) programs

For the course embedded assessment of Professional Readiness within the CTE programs, we asked faculty to identify a course and assignment to assess *at least one* of PR1, PR2, PR3, or PR4. We expected faculty would have an underlying rubric used to score their chosen assignment, and that rubric would cover or overlap the associated competencies. Faculty were asked to translate those components over to the broader single score described on each PR rubric (see Appendix A).

The most popular competency was Teamwork (PR2)

7 of 13 the programs chose *PR2: Collaborate effectively in teams or groups to complete a task or project* as one of competencies to contribute. Some assignments that program faculty chose to highlight included

- Students will work together as a team to efficiently and effectively manage a Mass Casualty Incident. [Emergency Medical Services]
- Students will work together as a team to complete a tower lifting winch system. This will require the specification of components, the planning of the assembly of the device and the completion of calculations to ensure a credible design. [Engineering Technology]
- Students will collaborate in teams of 2 to complete the anesthetic assignment and surgical assisting assignment on a canine or feline patient from initial patient assessment through recovery. [Veterinary Technology]

Additionally, 5 chose PR1 (Oral Communication), 4 programs chose PR4 (Organization and Planning), and 3 programs chose PR3 (Technology Use). Only one program did not participate in the assessment, and multiple programs opted to look at more than one competency within an assignment, or even multiple assignments.

Program faculty are very satisfied with student performance

Due to the varied nature of the programs, the level of the course chosen, and the complexity of the assignment within the course, there is no value in using the data to compare programs to each other. The intent is that, looking at many students across many programs, we get a picture not only of student competency, but also the extent to which program faculty view their students as sufficiently prepared to function in a professional setting. Very few student works scored as completely lacking in proficiency. Many of the courses the student work is pulled from come at the end of the program plan, weaker students have not made it to this point, and students in these classes should be high-performing. Many instructors indicated that in terms of class expectations, a score of 2 would not be considered satisfactory, and they would expect their students to be proficient (3) to exemplary (4) at the task.

PR summary scores (all components)

Score	Number	%
0	6	2%
1	8	3%
2	71	29%
3	80	33%
4	79	32%

A score of "2" indicates uneven performance but an overall impression of competence. A score of "3" indicates satisfactory or better performance on every component of the underlying scoring tool in use by the instructor.

Progress in using results...

We noted last year that this is the challenge, as it seems to be everywhere! We want program faculty to provide scores so we can have a broad sense of where they rate their students' performance, but there's no fixed benchmark to compare to. The real value of this approach is it allows faculty to make observations and identify trouble spots for improvement. We are working on ways to encourage faculty to treat these embedded assessments as more qualitative than quantitative.

We were asking faculty in a general way to remember to report observations and not just numbers, and not having much success. This time, we turned it into a series of specific questions. We started by sending the questions out in an email and recommending they address them in their assessment reporting, which yielded a little more reflection, but not much.

And then we hit it – *how about a Google form?* We sent one to a few program faculty and discovered that when directly asked, even faculty who had provided no detail in their writeups had something to say, regardless of where the scores were.

A few observations

- Students overall gave exceptional presentations and had a high interest in the chosen subject, but some did have trouble staying within the time limit specified, and that this would be a thing to emphasize [PR1, Aviation].
- Students displayed a willingness to learn a new technology, but students that were not comfortable with PCs took longer and needed more help...and waited until the deadline to ask. The instructor is considering pairing a weaker student with a stronger student that is willing to share their knowledge [PR3, Advanced Manufacturing].
- Only 65% of the students were able to successfully complete a three-part project; however, of those who didn't, 89% did complete two of the three parts. To address this challenge the assignment will be provided to students with three due dates for the three separate parts - this will hopefully address student's lack of detail and allow those who completed the most difficult part of the assignment to successfully complete the entire project [PR4, Accounting].

Going forward

The Google form questions look promising. In the process of (1) gather results, (2) make observations, (3) use observations to make changes, (4) reassess to see if the changes helped, we've been stuck at level (1) with a little bit of (2) for a long time. Presenting it as a series of questions shows potential for moving us firmly into level (2) with some (3), and we need to get there before there is any chance at (4). But we're making progress!

Think back about when you were grading your students' work. Did you notice any themes?

Name one thing you saw that they were particularly good at across the board.

Can you name one thing that they seemed to have trouble with?

Was there anything that jumped out that even the good students seemed a little weak on?

For the weaker students, what sorts of things tripped them up that you gave a lower score?

Did anything surprise you?

Name one thing you could do to support your weaker students and help them address the performance issues you noted above?

Competency: Critical Thinking

Critical Thinking is the ability to use information, ideas, and arguments from relevant perspectives to make sense of complex issues and solve problems. Students will locate, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

Instrument: Test of Everyday Reasoning (Insight Assessment)

The *Test of Everyday Reasoning* (TER) is a 35-question multiple-choice test calibrated for adult learners in associate degree programs. The TER breaks down results into the five subscales as described below. Descriptions are adapted from the *2021 TER User Manual*, which provides more detail on each component.

Analysis: to identify assumptions, reasons, themes, and evidence used in making arguments or offering explanations.

Inference: to draw conclusions from reasons, evidence, observations, experiences, or our values and beliefs in order to predict likely consequences.

Evaluation: to assess the credibility of claims and to assess the quality of the reasoning displayed in arguments or explanations.

Induction: to estimate likely outcomes in context of uncertainty.

Deduction: to determine the logical consequences of a given set of information with no room for uncertainty.

There is some alignment with the subscales and outcomes course faculty developed for course-embedded assessment. The assessment team discussed and provided the mapping of the TER subscales onto our current Critical Thinking and Scientific Reasoning outcomes.

Current (2021-2022) BRCC Outcomes	TER Subscales and # of items
CT1: Evaluate a source to determine its credibility for supporting arguments	Analysis (9); Evaluation (11)
CT2: Tie conclusion to a synthesis of information, including opposing viewpoints	Inference (15); Induction (16); Deduction (19)
CT3: Incorporate evidence appropriately into a work to support an argument or position	All components
SL2: Apply scientific methodology to analyze data and draw conclusions supported by the data	Inference (15); Induction (16); Deduction (19)

Methodology and limitations

The TER was administered to graduating students during the academic year 2021-2022. All associate degree graduates must participate, and students are notified when they apply for graduation. Most graduates took the TER in a proctored testing environment on campus or at the Waynesboro Outpost, however some took the assessment online due to various circumstances. The assessment is low stakes with no impact on students' GPA or graduation status, but we do place a hold on diplomas and transcripts to require students to complete. Of additional concern is the number of test takers when examining results by program. There were 9 programs which had an n of less than 10, and when we break out results by program, only the largest programs get data for their students.

Test-taker demographics

In 2021-2022, after deleting duplicate attempts, records with no name or ID, and records with 15 minutes or less spent in the assessment, there were 257 results. When matched with graduates, 17 students who had not actually graduated were deleted, yielding 240 complete assessment records. Detailed demographic information appears in *Appendix C: Critical Thinking Data Details*: Table 5, Table 6, and Table 7. Some general trends:

- We try to require these tests of all graduating students and have some measures in place to enforce it, but only slightly more than half (55%) of the 2021-22 graduates participated in the assessment.
- The program breakdown is close to half transfer (AA&S, AS), half career/technical (AAS). Within the AAS programs, only Vet Tech, Nursing, and Business Management had more than 10 graduates participating. These programs each get a detailed mini-report on their program graduates. The rest of the AAS programs have only handfuls of test-takers and do not receive any program-level information.
- We are interested in disaggregating on other indicators such as race/ethnicity, to see if any performance differences are revealed, but our demographics present some challenges there. The students represented in this assessment were majority White (185/240 = 77%), with the next largest group reporting as Hispanic/Latinx (24/240 = 10%). The other ethnicities are represented by less than 10 students each. Pell eligibility status and traditional vs. non-traditional age are more promising in terms of having a reasonable number of students in each component of their breakdowns.

Results

For data details and tables, refer to *Appendix C*. Here, we summarize and discuss anything that stood out.

Established benchmarks and overall performance

For comparison and analysis, we have the results from the large-scale administration of the instrument that took place at the VCCS level in 2013-2014. A standard-setting workshop took place at that time where representatives of VCCS colleges reviewed the TER and made recommendations. Insight provided a test blueprint (Table 8) mapping score ranges to performance for both the overall TER and the five subscales, and participants used this information to determine a minimum proficiency score: a test-taker would be considered "Proficient" if their overall TER score was 18 or above (falling within the Moderate range).

In terms of questions correct out of 35, the VCCS mean score across all colleges was 22.0 (n = 1043, SD = 5.8). The mean score for all BRCC graduates for the 2021-2022 assessment was 22.0 (n = 240, SD = 5.5). 76.8% of VCCS graduates scored at or above the cut-score for minimally proficient while 77.5% of BRCC graduates scored at or above the cut-score in 2021-2022.

Current BRCC performance is nearly identical to established VCCS performance data.

The VCCS did not provide a subscore breakdown, but we do have this information for the current BRCC administration ([Table 9](#)) and overall, performance appeared consistent across areas ranging from only 2% of graduates scoring as “Not Manifested” on Induction to at most 10% scoring at “Not Manifested” on Evaluation and Deduction.

Change over time

BRCC last administered the TER as a graduation assessment in 2018-2019. [Table 10](#) and [Table 11](#) provide comparison data.

- Scores are stable over time, with essentially no change in the overall mean score (21.9 questions correct in 2021-2022 vs 21.8 in 2018-2019).
- Broken into groups, the AA&S (transfer) overall did a touch worse than the last time, while the AAS career/technical programs did a touch better, but in either case, it’s roughly a single question either way.
- The dominant theme of “not much change” is more interesting than it appears at first glance, because it compares pre-COVID to post-COVID conditions. Students who completed the assessment in 2021-2022 would have had nearly all their general education classes and some of their major program classes delivered online in the previous year. Considering the average time to complete a degree is closer to 3 years than 2, many of them would have been starting out the year of the “pivot” of Spring 2020.
- There is a bit of a shift looking at the percentage of students scoring at or above the cut score. The transfer degrees (both AA&S and AS) dropped from ~85% to ~75% while the AAS degrees gained from ~70% to ~80%. That also is interesting with the COVID backdrop – nearly all the transfer-oriented classes went online over this period, but the CTE programs that have clinical components required an in-person presence and maintained at least some face-to-face components throughout.

The COVID pandemic had an impact on students’ ability to start and complete programs within this time frame, triggering a significant enrollment drop, so we want to be careful about phrasing this conclusion. ***For the students who were able to successfully complete a program over the course of the pandemic, changes in course delivery methods did not appear to impact performance on a test of critical thinking.***

Variation among programs

[Table 10](#) and [Table 11](#) break out the results by award type and to some extent by program; however as noted, a limitation of this type of assessment is that most of our programs have only a handful of graduates, and we only report out on programs with more than 10 graduates.

- Of the three CTE programs that have sufficient numbers to report on, Nursing and Vet Tech were standouts; Vet Tech in particular had ~90% of its graduates who took the TER scoring as proficient.
- Nursing had the biggest gain, going from 64% of its students scoring as proficient to 82%. This coincides with the jump in Scientific Literacy observed last year and may also be linked to the redesign of the Nursing curriculum.
- Both Nursing and Vet Tech have strong science curricula with an emphasis on evidence-based practice. They integrate active, participatory learning throughout the curriculum. And, unlike most of our programs, the students move through as a cohort and develop strong bonds with each other and the institution. That sense of institutional pride may be fueling some of the performance on a low-stakes assessment.
- On the other side, this group of Business Management students struggled with the assessment, with only ~53% scoring as proficient. It is worth noting that this group's time in the program coincided with the illness and death of the faculty member who was the heart of the program and its program manager for many years. Personnel were shifted to cover courses and program responsibilities mid-year in addition to the COVID-related actions. The new program manager supports the use of course-embedded assessment practices to inform and improve instruction and has developed a curriculum map to associate program learning outcomes with course projects. She will be working on this front to identify opportunities within classes to measure and strengthen Critical Thinking along with the other general education competencies.
- Nothing stands out about transfer student performance as a group. It tracks with the overall college and VCCS performance.

Variation among demographic groups

Disaggregated data appear in multiple tables in *Appendix C*. We looked at race/ethnicity (Table 12), Pell eligibility status (Table 13), first-generation status (Table 14), and traditional college age vs not (Table 15). We are not equipped to do the sort of formal analysis that would consider interactions between groups, but we can look at each grouping in isolation and see if any broad trends jump out. In short,

- Age and first-generation status don't appear to have much of an impact on TER scores.
- There do appear to be performance differences associated with race/ethnicity and Pell eligibility.
- ~83% of the White test-takers scored at the 18+ proficiency level, while less than 60% of Black/African American and Hispanic/Latino achieved that benchmark.
- Pell vs. non-Pell is less of a gap, but it's there: ~70% of Pell-eligible students achieve that benchmark compared to 83% for non-Pell.

Knowing that these gaps appear doesn't tell us anything about why, or what other factors might be involved – this is a part of an ongoing and complex conversation. For example, our Nursing and Vet Tech programs consistently produce the strongest scoring students on these graduation assessments, so we could look to see how these demographic groups are represented in those programs. The test scores might be indirectly telling us about something other than how well diverse groups of students answer critical thinking questions. There is a lot to be unpacked here, and this is going to become another data point in the conversations surrounding performance gaps.

Going forward

In 2021-2022, BRCC established the Diversity, Equity, and Inclusion Council (DEIC) and incorporated it into the formal governance structure to create a home for investigation and initiatives that support equity among groups. As part of the DEIC charge, the council will “identify methods and activities to help engage employees in professional development and meaningful dialogue to broaden their understanding of equity gaps in student success.”

Standing governance committees also had DEI-themed components added to their charges. The Curriculum Committee is partnering with the DEIC and has formed a subcommittee which is reviewing general education outcomes as part of its charge. The TER assessment data has been shared with the co-chairs to be included as part of its discussion.

The group began by deploying a “survey to gather information as it relates to instructional pedagogy and content infused with contexts related to social justice and DEI, as well as proactive professional development opportunities that embrace intersectionality and cultural relevance” [from the 2021-22 DEIC year-end report]. The report summarizes the results:

Equally, those who participated shared a common thread in recognizing the fusion of DEI content and pedagogy as an asset to teaching and learning. In addition, recommended professional development in the realm of intentional course design that embeds DEI concepts to strengthen inclusivity leading to student success. Strongest support for training on “How course design (face-to-face and online) can be tailored to improve DEI.

The DEIC has begun to identify, develop, and promote training activities in the current year, and will continue to do so going forward.

Appendix A: Professional Readiness Rubrics

Rubrics are styled after and adapted from numerous sources, including the AAC&U VALUE Rubrics, under the Creative Commons license [CC BY-NC-SA 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/). Rubrics are significantly modified from the original source and there is no implied endorsement by AAC&U.

PR1: Share information and understanding verbally in a clear and coherent manner appropriate for various audiences and consistent with workplace expectations (Oral Communication)

4 (Exemplary)	3 (Proficient)	2 (Developing)	1 (Emerging)	0 (Insufficient)
Achieves the highest rating in all components of the rubric the instructor has created/adopted for the specific oral communication task assigned.	Achieves at least a satisfactory rating in every component of the rubric the instructor has created/adopted for the specific oral communication task assigned. No components are unsatisfactory.	Performance is uneven, with component scores ranging from unsatisfactory to excellent. Overall impression is competent; there are (relatively few) unsatisfactory areas.	Performance is uneven, with component scores ranging from unsatisfactory to satisfactory. General impression is that improvement is needed overall.	Receives unsatisfactory ratings on most of the components of the rubric the instructor has created/adopted for the specific oral communication task assigned.

* The intent of this outcome is to provide a summary score for Oral Communication. Instructors should use a rubric that breaks down the components of this competency (the NCA "Competent Speaker Rubric" or similar; see below) and then map to the overall rating.

THE NCA COMPETENT SPEAKER SPEECH EVALUATION FORM

PRESENTATION COMPETENCIES		RATINGS		
		Unsatisfactory 0	Satisfactory 1	Excellent 2
Competency One Chooses and narrows a topic appropriately for the audience & occasion	<ul style="list-style-type: none"> ▪ Time ▪ Audience analysis 			
Competency Two Communicates the thesis/specific purpose in a manner appropriate for the audience & occasion	<ul style="list-style-type: none"> ▪ Thesis clearly stated 			
Competency Three Provides supporting material (including electronic and non-electronic presentational aids) appropriate for the audience & occasion	<ul style="list-style-type: none"> ▪ Variety of supporting materials used such as examples, anecdotes, examples, illustrations, expert or eye witness ▪ Evidence citation—not required but evaluate for proper citation is used 			
Competency Four Uses an organizational pattern appropriate to the topic, audience, occasion & purpose	<ul style="list-style-type: none"> ▪ Introduction: attention getter; thesis; relevance; preview ▪ Body: organizational pattern and transitions ▪ Conclusion: review and finality 			
Competency Five Uses language appropriate to the audience & occasion	<ul style="list-style-type: none"> ▪ Slang, curse words, jargon—merits UNSAT unless explained ▪ Acronyms OK but must be explained ▪ Word choice appropriate for audience 			
Competency Six Uses vocal variety in rate, pitch & intensity (volume) to heighten & maintain interest appropriate to the audience & occasion	<ul style="list-style-type: none"> ▪ Verbal fillers, ums—many = UNSAT ▪ Sing-song, monotone, flat reading negatively affects ▪ LOW volume negatively affects ▪ Speech impediments or accents OK if speaker makes attempt to be understood 			
Competency Seven Uses pronunciation, grammar, & articulation appropriate to the audience & occasion	<ul style="list-style-type: none"> ▪ Improper grammar used—one "ain't" is UNSAT ▪ Pronunciation of words accurate ▪ Audience not distracted by improperly formed words or sounds 			
Competency Eight Uses physical behaviors that support the verbal message	<ul style="list-style-type: none"> ▪ Usage of notecards OK; extemporaneous style used ▪ Appearance and attire appropriate ▪ Demeanor matches intent of speech and message ▪ Visual Aids—not required but if used evaluate for appropriateness 			

PR2: Collaborate effectively in teams or groups to complete a task or project (Teamwork)

4 (Exemplary)	3 (Proficient)	2 (Developing)	1 (Emerging)	0 (Insufficient)
Takes on a leadership role and performs it effectively in addition to meeting the standard as a proficient contributor to the project.	Makes solid contributions to project in terms of timeliness in completing assigned work. Makes genuine effort to work effectively with others and provide skills to team. No complaints about contribution.	Makes some attempts to contribute to the project and work with other team members, but contributions are sporadic and limited. A few complaints from team members about lack of contribution.	Attends but does not contribute in a meaningful way to group work. More than a few complaints from team members about lack of contribution.	Is assigned to a team but fails to participate or communicate with the instructor.

* The intent of this outcome is to provide a summary score for Teamwork. It assumes instructors have an underlying rubric or process for tracking student behavior and participation.

PR3: Demonstrate proficient use of a tool and/or software in the context of a task or project (Technology Use)

4 (Exemplary)	3 (Proficient)	2 (Developing)	1 (Emerging)	0 (Insufficient)
Properly uses tool/software to perform a task yielding a correct outcome. The use of or result from tool/software is exceptional, taking initiative to explore and incorporate features beyond the instruction provided.	Properly uses tool/software to perform a task yielding a correct outcome. Uses tool/software as directed, following instructions accurately.	Commits minor errors using tool/software; errors yield a partially correct outcome.	Commits major errors using tool/software; errors lead to an incorrect outcome.	Fails to use tool/software as directed and is incapable of producing a result.

PR4: Demonstrate ability to complete a complex multi-part or multi-step task (Organization and Planning)

4 (Exemplary)	3 (Proficient)	2 (Developing)	1 (Emerging)	0 (Insufficient)
Completes the task inclusive of all the required elements/all steps of the process. All parts are high quality and display excellent time and project management skill.	Completes the task inclusive of all the required elements/all steps of the process. All parts are complete and acceptable, but some minor variation in quality and/or timeliness is evident.	Attempts and completes the majority of the task. Lesser elements or steps may be omitted or hastily done and/or components of the task need improvement, but the overall product does exist.	Attempts the task but does not include the majority of the required elements; completes initial steps but does not follow through to the end.	Does not attempt the assigned task.

Appendix B: Professional Readiness Data Details

Table 1: Fall 2021 CST 110 vs the 2013 VCCS Oral Communication graduation assessment

NCA Competency	BRCC 2021 Mean Score (n=31)	BRCC 2013 Mean Score (n=53)	VCCS Colleges 2013 (n=575)
One: Chooses and narrows a topic appropriately for the audience and occasion.	1.59	0.85	0.71
Two: Communicates the thesis/specific purpose in a manner appropriate for the audience and occasion.	1.49	0.75	0.77
Three: Provides supporting materials (including electronic and non-electronic presentation aids) appropriate for the audience and occasion.	1.44	0.98	0.78
Four: Uses an organizational pattern appropriate to the topic, audience, occasion, and purpose.	1.34	0.40	0.60
Five: Uses language appropriate to the audience and occasion.	1.62	1.08	1.02
Six: Uses vocal variety in rate, pitch, and intensity (volume) to heighten and maintain interest appropriate to the audience and occasion.	1.01	0.66	0.75
Seven: Uses pronunciation, grammar, and articulation appropriate to the audience and occasion.	1.39	0.92	1.01
Eight: Uses physical behaviors that support the verbal message.	1.35	0.68	0.70
Mean across all components	1.40	0.79	0.79

Table 2: Career/Technical program contribution by program for Professional Readiness

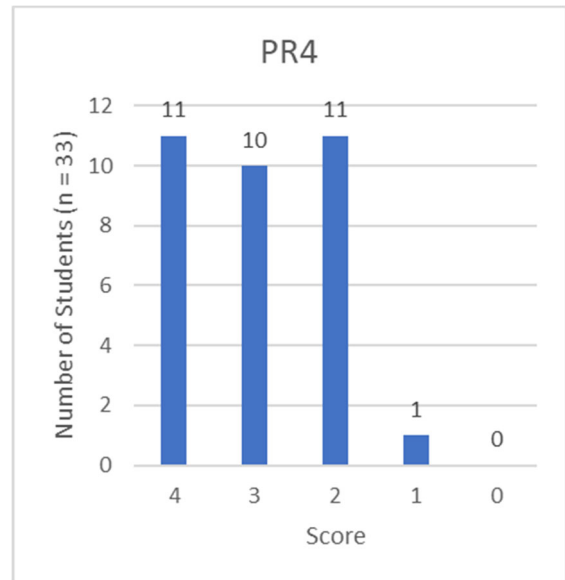
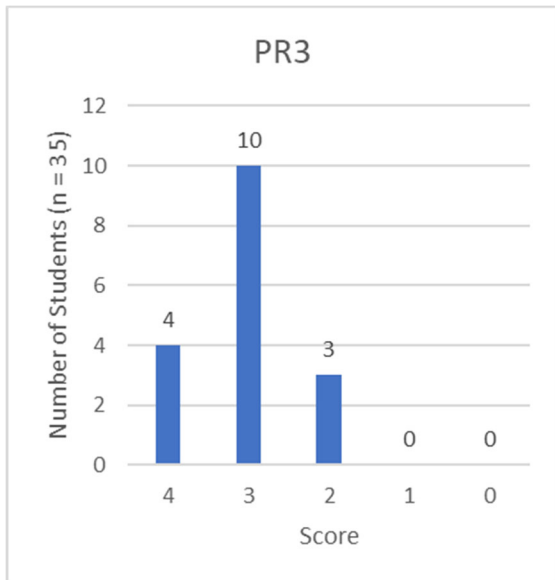
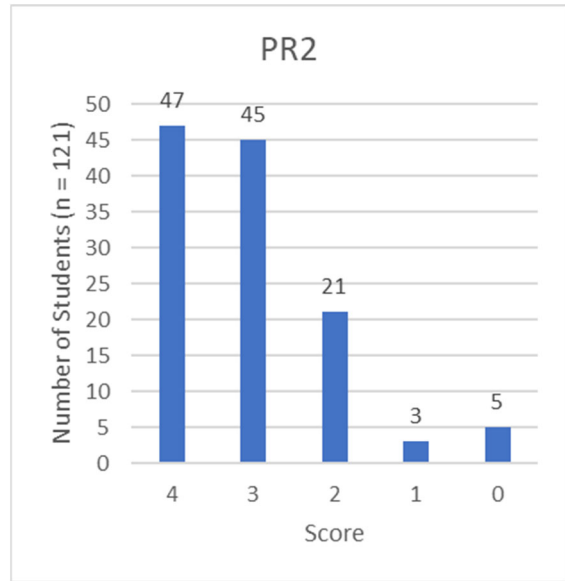
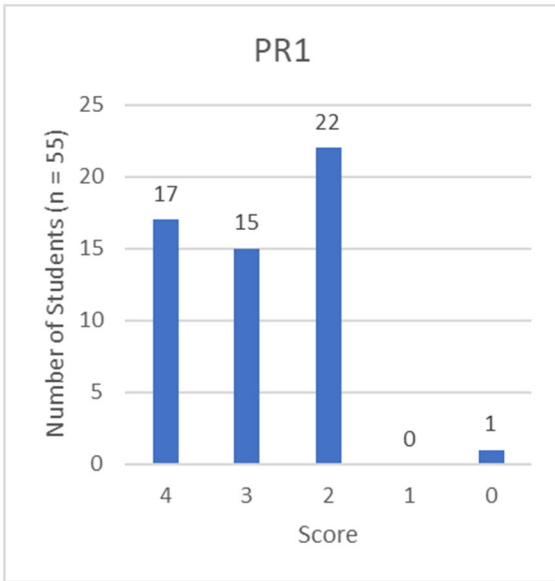
Program	PR1	PR2	PR3	PR4	Total	%
Accounting	0	0	9	0	9	4.5%
Administration of Justice	0	0	0	7	7	3.5%
Advanced Manufacturing	0	18	0	0	0	8.9%
Automotive	0	0	0	0	0	0.0%
Aviation	12	0	0	0	12	5.9%
Business Management	23	35	0	0	58	28.7%
Computer and Electronics Technology	5	5	5	5	5*	2.5%
Emergency Medical Services	0	5	0	0	5	2.5%
Engineering Technology	3	3	3	3	3*	1.5%
Human Services	0	16	0	0	16	7.9%
Information Systems Technology	12	0	0	0	12	5.9%
Nursing	0	39	0	0	39	19.3%
Veterinary Technology	0	18	0	18	18*	8.9%
All Programs						

Table 2 shows the numbers of works scored for each outcome, total number of student works contributed, and percentage that each program contributed to the total. The three programs indicated with a * scored multiple competencies on one assignment.

Table 3: Career/Technical program score data for Professional Readiness

	n	Mean	SD	% at 4	% at 3	% at 2	% at 1	% at 0
PR1	55	2.85	0.92	30.9%	27.3%	40.0%	0.0%	1.8%
PR2	121	3.04	1.02	38.8%	37.2%	17.4%	2.5%	4.1%
PR3	35	2.40	0.83	11.4%	28.6%	48.6%	11.4%	0.0%
PR4	33	2.94	0.89	33.3%	30.3%	33.3%	3.0%	0.0%

Table 4: Counts of CTE students at each level for each competency



Appendix C: Critical Thinking Data Details

Table 5: TER test-taker demographics 2021-2022

Age Group	Count	Gender	Count	Ethnicity	Count	First Gen	Count	Pell Eligible	Count
17-22	120	Female	157	American Indian	1	No / Unknown	212	No	146
23-28	64	Male	80	Asian, Pacific Islander	9	Yes	28	Yes	94
29-35	29	Unknown / Chose not to provide	3	Black, African American	9				
36-45	15			Hispanic, Latino	24				
Over 45	12			White	185				
				Other	11				
				Choose not to provide	1				
Total	240	Total	240	Total	240	Total	240	Total	240

Table 6: TER test-taker demographics 2018-2019

Age Group	Count	Gender	Count	Ethnicity	Count	First Gen	Count	Pell Eligible	Count
17-22	202	Female	203	American Indian	1	No / Unknown	276	No	181
23-28	94	Male	152	Asian, Pacific Islander	8	Yes	82	Yes	177
29-35	30	Unknown / Chose not to provide	3	Black, African American	21				
36-45	21			Hispanic, Latino	34				
Over 45	11			White	281				
				Other	7				
				Choose not to provide	6				
Total	358	Total	358	Total	358	Total	358	Total	358

Table 7: TER test-taker breakdown by program 2021-2022

Award	Program	Assessed	Degrees Awarded
AA&S	College/University Transfer	117	234
AS	Science	13	27
AAS	(All AAS combined)	114	180
AAS	Accounting	3	3
AAS	Administration of Justice	7	12
AAS	Advanced Manufacturing Technology	5	12
AAS	Automotive Analysis and Repair	0	0
AAS	Aviation Maintenance Technology	0	10
AAS	Business Management	15	26
AAS	Computer and Electronics Technology	2	4
AAS	Emergency Medical Services	2	7
AAS	Engineering Technology / Mechanical Design	2	4
AAS	Human Services	5	8
AAS	Information Systems Technology	10	15
AAS	Nursing	34	45
AAS	Veterinary Technology	29	34

Table 7 shows the number of students from each major program. Four students graduated with associate awards in two different categories during the 2021-2022 academic year.

Table 8: TER test blueprint provided by Insight Assessment

	Performance Category			
	Not Manifested	Moderate	Strong	Superior
TER Overall Score	0-14	15-23	24-28	29 or higher
Analysis Subscale	0-3	4-6	7 or more	
Inference Subscale	0-4	5-10	11 or more	
Evaluation Subscale	0-3	4-7	8 or more	
Induction Subscale	0-4	5-10	11 or more	
Deduction Subscale	0-6	7-12	13 or more	

Table 9: % of TER test-takers in each performance category 2021-2022

	% of students scoring in each Performance Category			
	Not Manifested	Moderate	Strong	Superior
TER Overall Score	10%	48%	29%	13%
Analysis Subscale	7%	48%	45%	
Inference Subscale	4%	64%	32%	
Evaluation Subscale	10%	58%	32%	
Induction Subscale	2%	41%	57%	
Deduction Subscale	10%	51%	39%	

Table 10: Comparison of mean scores over time

	BRCC: 2021 – 2022			BRCC: 2018 – 2019			M1-M2	p	d
	n	M1	SD1	n	M2	SD2			
All Graduates	240	21.9	5.54	358	21.8	5.24	0.1	0.82	0.02
AA&S: College Transfer	117	21.9	5.73	186	22.6	4.95	-0.7	0.26	-0.13
AS: Science	13	24.3	7.44	39	23.2	5.30	1.1	0.56	0.17
AAS: All Majors	114	21.6	4.99	133	20.4	5.34	1.2	0.07	0.23
AAS: Business Management	15	18.9	5.80	15	19.7	6.58	-0.8	0.73	-0.13
AAS: Nursing	34	21.4	4.37	44	20.3	5.88	1.1	0.36	0.21
AAS: Veterinary Technology	29	22.5	4.48	16	21.7	5.07	0.8	0.59	0.17

Table 11: Comparison of percentage of students scoring 18 or greater over time

	BRCC: 2021 – 2022		BRCC: 2018 - 2019		%1-%2
	n	%1	n	%2	
All Graduates	240	77.5%	358	79.3%	-1.8
AA&S: College Transfer	117	75.2%	186	85.5%	-10.3
AS: Science	13	76.9%	39	87.2%	-10.3
AAS: All Majors	114	80.7%	133	68.4%	12.3
AAS: Business Management	15	53.3%	15	60.0%	-6.7
AAS: Nursing	34	82.4%	44	63.6%	18.8
AAS: Veterinary Technology	29	89.7%	16	75.0%	14.7

Table 12: TER score breakdown by race/ethnicity

	n	TER mean score	SD	% scoring >= 18
All Graduates	240	21.9	5.54	77.5%
Asian, Pacific Islander	9	20.1	5.78	66.7%
Black, African American	9	18.1	6.62	55.6%
Hispanic, Latino	24	18.8	5.92	58.3%
White	185	22.5	5.10	82.7%

Table 13: TER score breakdown by Pell eligibility status

	n	TER mean score	SD	% scoring >= 18
All Graduates	240	21.9	5.54	77.5%
No (Pell)	146	22.8	5.49	82.9%
Yes (Pell)	94	20.4	5.26	69.1%

Table 14: TER score breakdown by “first-generation” status

	<i>n</i>	TER mean score	SD	% scoring ≥ 18
All Graduates	240	21.9	5.54	77.5%
No (FirstGen)	212	22	5.6	77.8%
Yes (FirstGen)	28	21.1	4.87	75%

Table 15: TER score breakdown by traditional college-age vs non-traditional

	<i>n</i>	TER mean score	SD	% scoring ≥ 18
All Graduates	240	21.9	5.54	77.5%
Age 17 - 22	120	22.4	5.11	80%
Age 23+	120	21.4	5.87	75%