Institutional Assessment Data
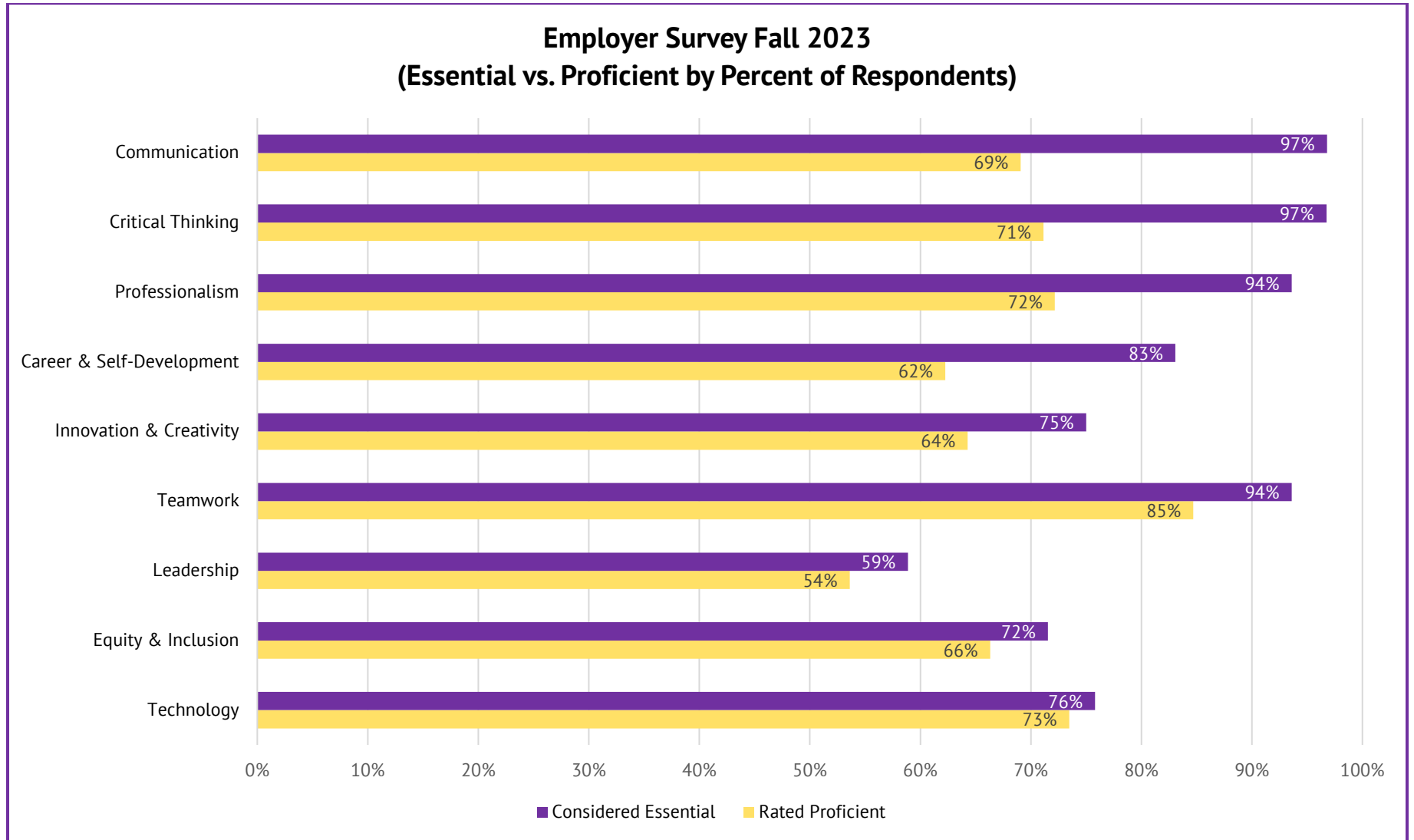# QEP Topic Selection Committee

1. Employer Survey

2. PEG Alumni Attitude Survey

3. IDEA Course Evaluations

4. National Survey of Student Engagement (NSSE)

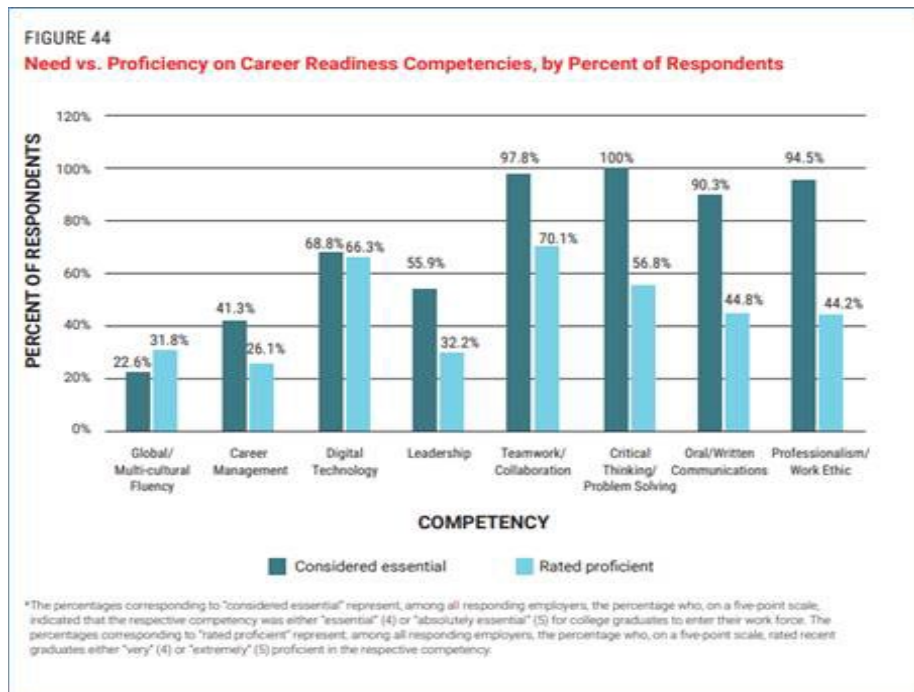5. California Critical Thinking Skills Test (CCTST)

The Employer Survey was administered in Fall 2023 to garner feedback from employers interested in Tennessee Tech graduates. The survey asked employers to rate the importance of NACE career competencies for new graduates entering the job market and for those employers who had hired TN Tech graduates to rate the proficiency of those employees. The chart below compares the importance of NACE competencies with perceived proficiency.

Employer Survey Fall 2023
(Essential vs. Proficient by Percent of Respondents)

Competency	Considered Essential	Rated Proficient
Communication	97%	69%
Critical Thinking	97%	71%
Professionalism	94%	72%
Career & Self-Development	83%	62%
Innovation & Creativity	75%	64%
Teamwork	94%	85%
Leadership	59%	54%
Equity & Inclusion	72%	66%
Technology	76%	73%

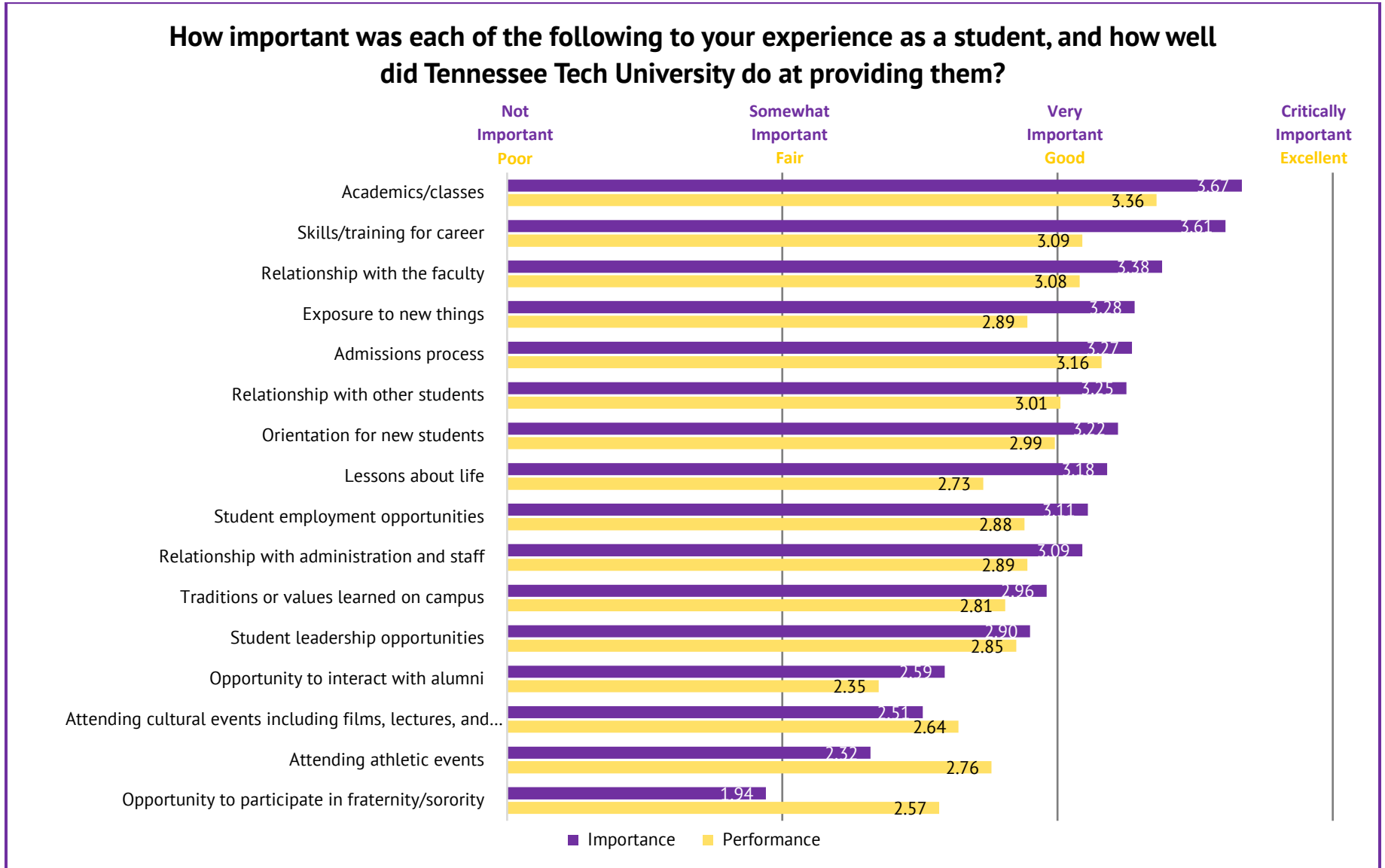■ Considered Essential   ■ Rated Proficient

NACE Competencies

1. **Professionalism** - Knowing work environments differ greatly, understanding and demonstrating effective work habits, and acting in the interest of the larger community and workplace.
2. **Critical Thinking** - Identifying and responding to needs based upon an understanding of situational context and logical analysis of relevant information.
3. **Communication** - Clearly and effectively exchanging information, ideas, facts, and perspectives with persons inside and outside of an organization.
4. **Teamwork** - Building and maintaining collaborative relationships to work effectively toward common goals, while appreciating diverse viewpoints and shared responsibilities.
5. **Technology** - Understanding and leveraging technologies ethically to enhance efficiencies, complete tasks, and accomplish goals.
6. **Leadership** - Recognizing and capitalizing on personal and team strengths to achieve organizational goals.
7. **Equity & Inclusion** - Demonstrating the awareness, attitude, knowledge, and skills required to equitably engage and include people from different local and global cultures. Engaging in anti-racist practices that actively challenge the systems, structures, and policies of racism.
8. **Career & Self-Development** - Proactively developing oneself and one's career through continual personal and professional learning, awareness of one's strengths and weaknesses, navigation of career opportunities, and networking to build relationships within and without one's organization.
9. *Innovation and Creativity* - Generating new ideas and novel solutions through practices such as innovation, creative problem solving, creative thinking, imagination, visionary approaches, ingenuity, ideation, experimentation, and brainstorming. (Not an original NACE competency; added due to its relation to Tennessee Tech's mission)

NACE National Comparison Results

FIGURE 44
Need vs. Proficiency on Career Readiness Competencies, by Percent of Respondents

*The percentages corresponding to "considered essential" represent, among all responding employers, the percentage who, on a five-point scale, indicated that the respective competency was either "essential" (4) or "absolutely essential" (5) for college graduates to enter their work force. The percentages corresponding to "rated proficient" represent, among all responding employers, the percentage who, on a five-point scale, rated recent graduates either "very" (4) or "extremely" (5) proficient in the respective competency.
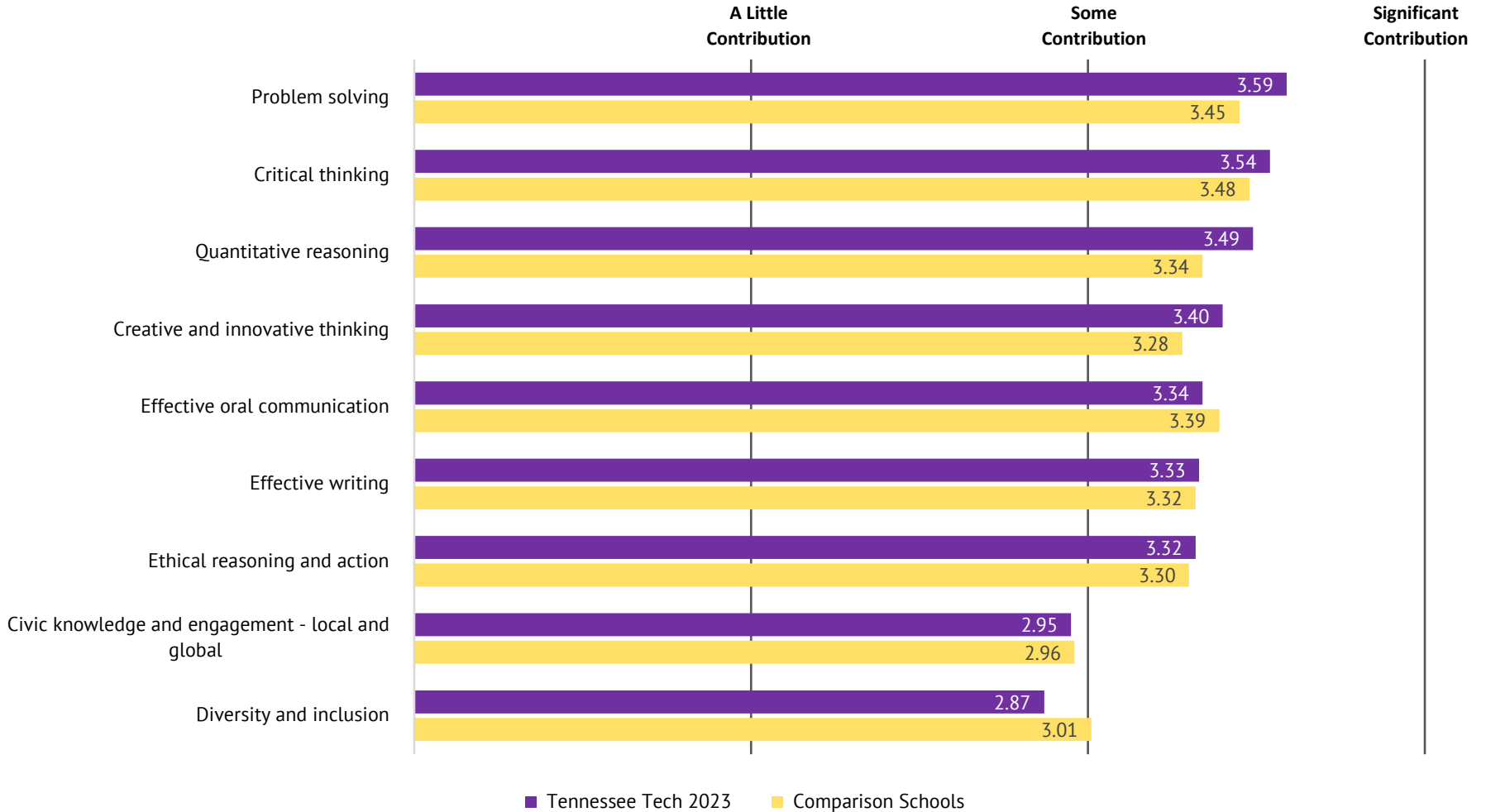
The PEG Alumni Attitude Survey is administered as part of the THEC Quality Assurance Funding initiative. The survey includes questions that evaluate the university's contribution to alumni experiences as a student and academic development.
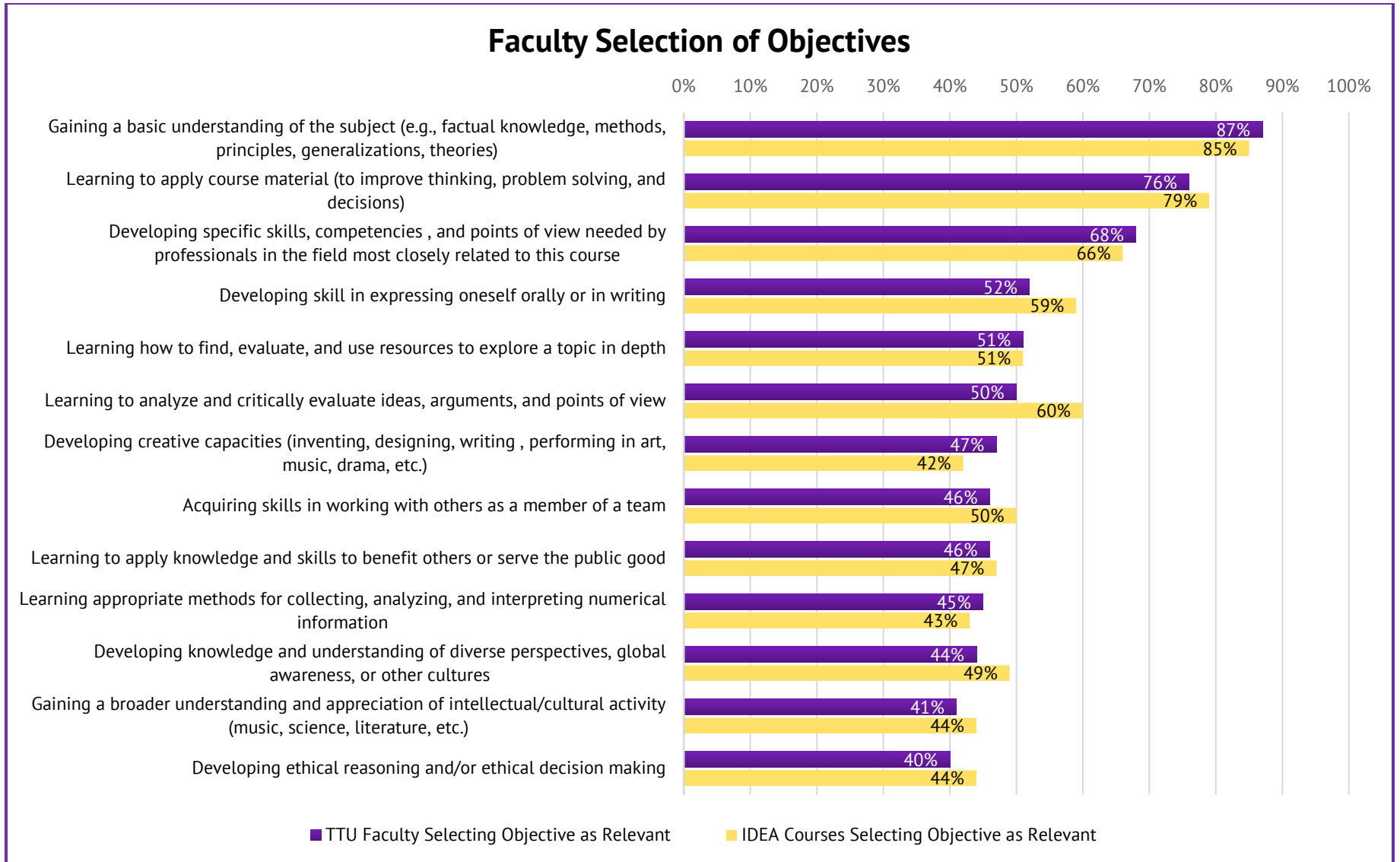
How important was each of the following to your experience as a student, and how well did Tennessee Tech University do at providing them?

	Not Important / Poor	Somewhat Important / Fair	Very Important / Good	Critically Important / Excellent

Category	Importance	Performance
Academics/classes	3.67	3.36
Skills/training for career	3.61	3.09
Relationship with the faculty	3.38	3.08
Exposure to new things	3.28	2.89
Admissions process	3.27	3.16
Relationship with other students	3.25	3.01
Orientation for new students	3.22	2.99
Lessons about life	3.18	2.73
Student employment opportunities	3.11	2.88
Relationship with administration and staff	3.09	2.89
Traditions or values learned on campus	2.96	2.81
Student leadership opportunities	2.90	2.85
Opportunity to interact with alumni	2.59	2.35
Attending cultural events including films, lectures, and…	2.51	2.64
Attending athletic events	2.32	2.76
Opportunity to participate in fraternity/sorority	1.94	2.57

■ Importance ■ Performance

To what extent do each of the following contribute to how well Tennessee Tech University prepared you?

	A Little Contribution	Some Contribution	Significant Contribution

Problem solving
- Tennessee Tech 2023: 3.59
- Comparison Schools: 3.45

Critical thinking
- Tennessee Tech 2023: 3.54
- Comparison Schools: 3.48

Quantitative reasoning
- Tennessee Tech 2023: 3.49
- Comparison Schools: 3.34

Creative and innovative thinking
- Tennessee Tech 2023: 3.40
- Comparison Schools: 3.28

Effective oral communication
- Tennessee Tech 2023: 3.34
- Comparison Schools: 3.39

Effective writing
- Tennessee Tech 2023: 3.33
- Comparison Schools: 3.32

Ethical reasoning and action
- Tennessee Tech 2023: 3.32
- Comparison Schools: 3.30

Civic knowledge and engagement - local and global
- Tennessee Tech 2023: 2.95
- Comparison Schools: 2.96

Diversity and inclusion
- Tennessee Tech 2023: 2.87
- Comparison Schools: 3.01

■ Tennessee Tech 2023 ■ Comparison Schools
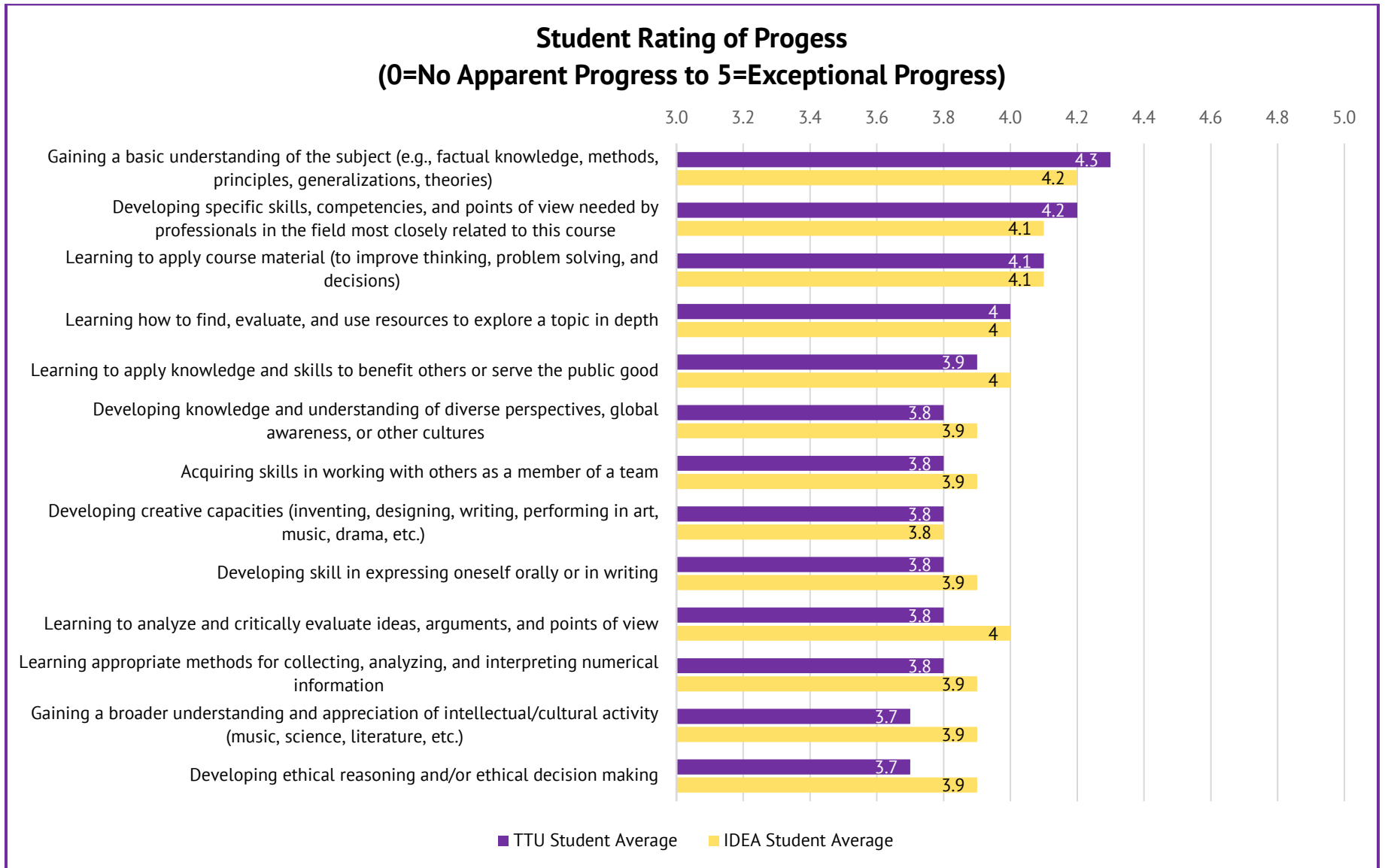
IDEA course evaluations are administered each semester. The survey format allows faculty to select a set of objectives on which their course will be assessed. The tables in this summary report illustrate the objectives that faculty have selected and the progress that students have reported making on those objectives.

Faculty Selection of Objectives

Objective	TTU Faculty Selecting Objective as Relevant	IDEA Courses Selecting Objective as Relevant
Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)	87%	85%
Learning to apply course material (to improve thinking, problem solving, and decisions)	76%	79%
Developing specific skills, competencies , and points of view needed by professionals in the field most closely related to this course	68%	66%
Developing skill in expressing oneself orally or in writing	52%	59%
Learning how to find, evaluate, and use resources to explore a topic in depth	51%	51%
Learning to analyze and critically evaluate ideas, arguments, and points of view	50%	60%
Developing creative capacities (inventing, designing, writing , performing in art, music, drama, etc.)	47%	42%
Acquiring skills in working with others as a member of a team	46%	50%
Learning to apply knowledge and skills to benefit others or serve the public good	46%	47%
Learning appropriate methods for collecting, analyzing, and interpreting numerical information	45%	43%
Developing knowledge and understanding of diverse perspectives, global awareness, or other cultures	44%	49%
Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc.)	41%	44%
Developing ethical reasoning and/or ethical decision making	40%	44%

■ TTU Faculty Selecting Objective as Relevant   ■ IDEA Courses Selecting Objective as Relevant

Student Rating of Progess
(0=No Apparent Progress to 5=Exceptional Progress)

Category	TTU Student Average	IDEA Student Average
Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)	4.3	4.2
Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course	4.2	4.1
Learning to apply course material (to improve thinking, problem solving, and decisions)	4.1	4.1
Learning how to find, evaluate, and use resources to explore a topic in depth	4	4
Learning to apply knowledge and skills to benefit others or serve the public good	3.9	4
Developing knowledge and understanding of diverse perspectives, global awareness, or other cultures	3.8	3.9
Acquiring skills in working with others as a member of a team	3.8	3.9
Developing creative capacities (inventing, designing, writing, performing in art, music, drama, etc.)	3.8	3.8
Developing skill in expressing oneself orally or in writing	3.8	3.9
Learning to analyze and critically evaluate ideas, arguments, and points of view	3.8	4
Learning appropriate methods for collecting, analyzing, and interpreting numerical information	3.8	3.9
Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc.)	3.7	3.9
Developing ethical reasoning and/or ethical decision making	3.7	3.9

■ TTU Student Average   ■ IDEA Student Average

The National Survey of Student Engagement (NSSE) is a widely distributed survey that provides an estimate of how undergraduate students spend their time and what they gain from attending college. The survey is administered to all first-year students and all senior students to illustrate the 'value added' from experiences at the institution. Comparisons to peer institutions (Carnegie peers) are also provided. The NSSE is administered every 3 years as part of THEC's Quality Assurance Funding requirements.

Engagement Indicators

Engagement Indicators (EIs) provide valuable information about distinct aspects of student engagement by summarizing students' responses to sets of related survey questions.

Higher Order Learning: Challenging intellectual and creative work is central to student learning and collegiate quality. Colleges and universities promote high levels of student achievement by calling on students to engage in complex cognitive tasks requiring more than mere memorization of facts. This Engagement Indicator captures how much students' coursework emphasizes challenging cognitive tasks such as application, analysis, judgment, and synthesis.

Engagement Indicator	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
Higher Order Learning	35.7	36.9 (-0.09)	37.9	39.3* (-0.10)
4b. Applying facts, theories, or methods to practical problems or new situations	2.8	2.8 (-0.05)	3.1	3.0 (+0.03)
4c. Analyzing an idea, experience, or line of reasoning in depth by examining its parts	2.8	2.8 (-0.06)	2.9	3.0 (-0.08)
4d. Evaluating a point of view, decision, or information source	2.8	2.8* (-0.10)	2.8	2.9** (-0.13)
4e. Forming a new idea or understanding from various pieces of information	2.8	2.8 (-0.09)	2.8	2.9* (-0.11)

*p<.05, **p<.01, ***p<.001 (2-tailed)

Quantitative Reasoning: Quantitative Literacy the ability to use and understand numerical and statistical information in everyday life— is an increasingly important outcome of higher education. All students, regardless of major, should have ample opportunities to develop their ability to reason quantitatively—to evaluate, support, and critique arguments using numerical and statistical information.

Engagement Indicator	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
Quantitative Reasoning	28.4	27.7 (+0.05)	32.1	29.7** (+0.15)
6a. Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	2.6	2.6 (+0.09)	2.8	2.6*** (+0.15)
6b. Used numerical information to examine a real-world problem or issue (unemployment, climate change, public	2.3	2.3 (+0.01)	2.5	2.4* (+0.10)
6c. Evaluated what others have concluded from numerical information	2.3	2.3 (+0.01)	2.5	2.5** (+0.12)

*p<.05, **p<.01, ***p<.001 (2-tailed)

Reflective & Integrative Learning: Personally connecting with course material requires students to relate their understandings and experiences to the content at hand. Instructors emphasizing reflective and integrative learning motivate students to make connections between their learning and the world around them, reexamining their own beliefs and considering issues and ideas from others' perspectives.

Engagement Indicator	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
Reflective & Integrative Learning	32.0	34.3*** (-0.19)	35.2	37.1*** (-0.14)
2a. Combined ideas from different courses when completing assignments	2.4	2.5** (-0.15)	3.0	2.9* (+0.09)
2b. Connected your learning to societal problems or issues	2.3	2.5*** (-0.20)	2.6	2.7** (-0.13)
2c. Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	2.3	2.5*** (-0.21)	2.2	2.5*** (-0.28)
2d. Examined the strengths and weaknesses of your own views on a topic or issue	2.7	2.7 (-0.07)	2.7	2.8* (-0.09)
2e. Tried to better understand someone else's views by imagining how an issue looks from their perspective	2.8	2.9 (-0.06)	2.8	3.0*** (-0.17)
2f. Learned something that changed the way you understand an issue or concept	2.7	2.8** (-0.16)	2.9	2.9* (-0.09)
2g. Connected ideas from your courses to your prior experiences and knowledge	3.0	3.0 (-0.02)	3.1	3.2 (-0.06)

*p<.05, **p<.01, ***p<.001 (2-tailed)

Discussions with Diverse Others: Colleges and universities afford students new opportunities to interact with and learn from others with different backgrounds and life experiences. Interactions across difference, both inside and outside the classroom, confer educational benefits and prepare students for personal and civic participation in a diverse and interdependent world.

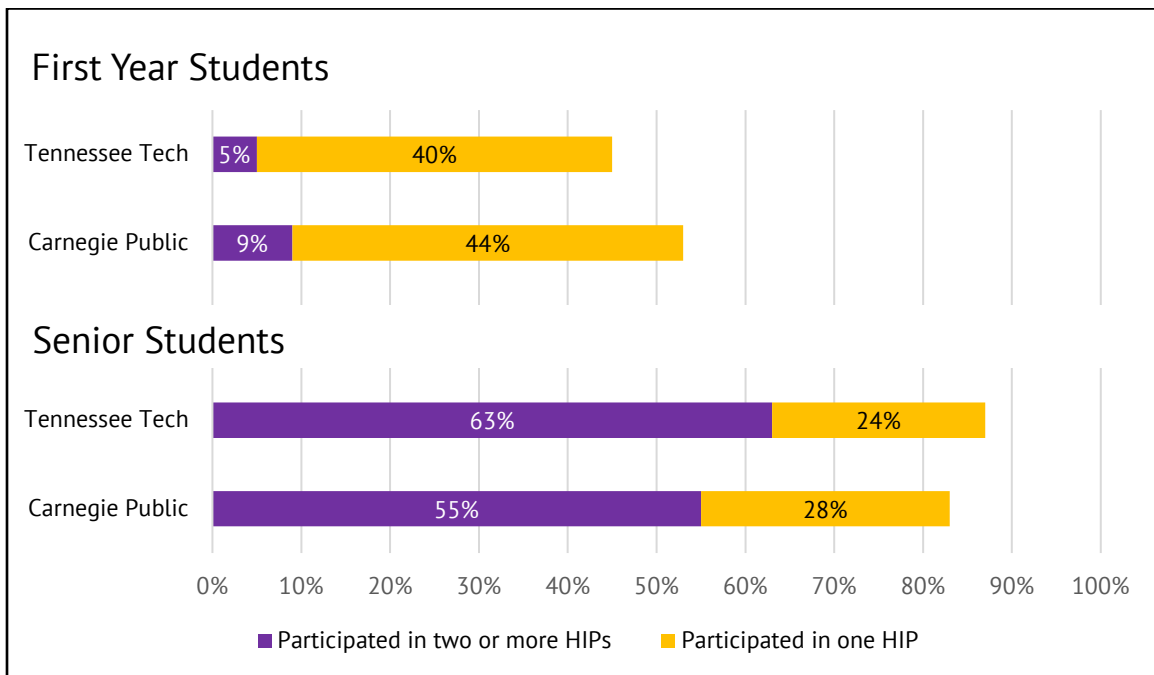| Question	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
8a. People of a race or ethnicity other than your own	2.7	2.9*** (-0.21)	2.8	2.9* (-0.11)
8b. People from an economic background other than your own	2.8	2.9** (-0.15)	3.0	3.0 (+0.04)
8c. People with religious beliefs other than your own	2.7	2.8** (-0.14)	2.8	2.9 (-0.06)
8d. People with political views other than your own	2.8	2.6 (+0.02)	3.0	2.9** (+0.14)

*p<.05, **p<.01, ***p<.001 (2-tailed)

High-Impact Practices

High-Impact Practices (HIPs) represent enriching educational experiences that can be life-changing. They typically demand considerable time and effort, facilitate learning outside of the classroom, require meaningful interactions with faculty and other students, encourage collaboration with diverse others, and provide frequent and substantive feedback.

11. Which of the following have you done or do you plan to do before you graduate?

High Impact Practice	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
Service Learning	43%	46% (-0.06)	60%	57% (+0.06)
Learning Community	5%	14%*** (-0.30)	23%	23% (+0.01)
Research with a Faculty Member	4%	4% (+0.01)	27%	20%*** (+0.17)
Internship or Field Experience	4%	6% (-0.09)	48%	44% (+0.08)
Study Abroad	1%	2% (-0.05)	6%	10%** (-0.14)
Culminating Senior Experience	1%	2% (-0.03)	49%	40%*** (+0.17)

*p<.05, **p<.01, ***p<.001 (2-tailed)

Additional Relevant NSSE Question Sets

18. How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

Question	First-Year Students		Seniors	
	Tennessee Tech	Carnegie Public	Tennessee Tech	Carnegie Public
18a. Writing clearly and effectively	2.6	2.7*** (-0.19)	2.9	2.9 (+0.01)
18b. Speaking clearly and effectively	2.6	2.6 (+0.00)	2.9	2.8* (+0.10)
18c. Thinking critically and analytically	3.0	3.0 (-0.05)	3.3	3.3 (+0.06)
18d. Analyzing numerical and statistical information	2.7	2.6 (+0.10)	3.1	2.9*** (+0.24)
18e. Acquiring job-or work-related knowledge and skills	2.6	2.5* (+0.11)	3.0	2.9** (+0.13)
18f. Working effectively with others	2.6	2.7** (-0.18)	3.1	3.0 (+0.08)
18g. Developing or clarifying a personal code of values and ethics	2.5	2.6** (-0.17)	2.8	2.8 (+0.00)
18h. Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	2.4	2.7*** (-0.34)	2.7	2.8** (-0.12)
18i. Solving complex real-world problems	2.5	2.6 (-0.06)	2.9	2.8* (+0.10)
18j. Being an informed and active citizen	2.4	2.6*** (-0.18)	2.6	2.7 (-0.04)

*p<.05, **p<.01, ***p<.001 (2-tailed)

The California Critical Thinking Skills Test (CCTST) is designed to measure critical thinking skills associated with solving problems and forming reasoned judgements. The CCTST is administered as a senior exit exam to all students graduating with a bachelor's degree from Tennessee Tech. This report contains mean data from the CCTST comparing the institution and national mean scores for the past three academic years.

CCTST Mean Total Scores (2022-23)
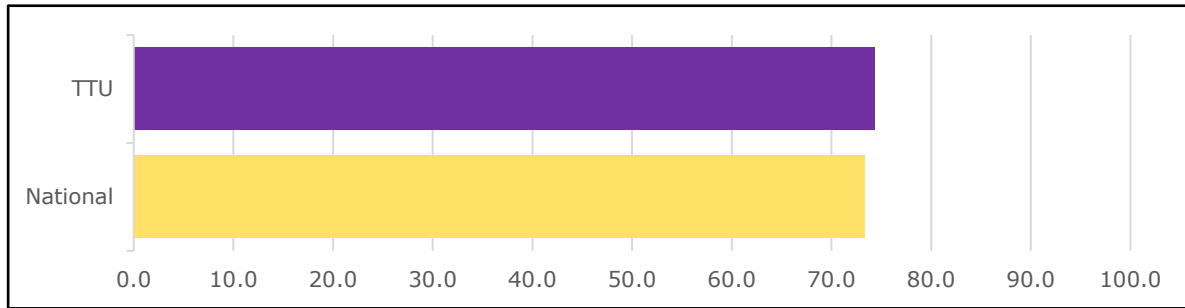
		2020-21	2021-22	2022-23
TTU	Mean	74.5	75.2	74.3
	N	1,444	1,457	1,652
National	Mean	74.0	73.3	73.3

CCTST Mean Total Scores