IR CORNER

Data Democratization
An increasing reliance on data for an evidence-based approach

A TCC Campus is Just Down the Road
Do students attend the TCC campus closest to their homes?

Choosing Completely Online
Are students who work, care for dependents, or have more access to resources more likely to prefer a completely online schedule?

TARRANT COUNTY COLLEGE
OFFICE OF INSTITUTIONAL RESEARCH
DIVISION OF INFORMATION TECHNOLOGY

Data Democratization
Holly Stovall

Data are ubiquitous. Like many organizations, TCC's reliance on data for both reporting needs and informed-decision making continues to rise. As constituents gain data literacy, the desire for faster and more wide-spread access to data alongside data visualizations that elucidate important patterns have strengthened the need for systems with these capabilities. We've evolved from a world where data are just descriptive to a place where they may be predictive and ultimately prescriptive. Thus, instead of having hindsight, we try to gain insight and eventually foresight. In IR, we're aligning our efforts with these goals of data access and useability by creating dashboards and executive summaries while fostering the appropriate use of data through training such as our data courses and educational video series, *Data's Anatomy*.

In this issue, we utilize publicly available data and resources to examine the relationship between educational attainment and poverty in Tarrant County, compare various populations to the overall demographics of Tarrant County, and geocode students' addresses to determine if students attend the TCC campus closest to their homes. In addition, we investigate the impact of the new TSI assessment on course placement, determine which courses are more commonly taken together, and consider factors that might be related to a student's preference for a completely online schedule.

Unlike "data on demand", instantaneous research is not feasible. However, our hope is that IR Corner promotes access to interesting findings at TCC and facilitates their use which is at the root of data democratization.

inspIRe

"The goal is to turn data into information, and information into insight."*

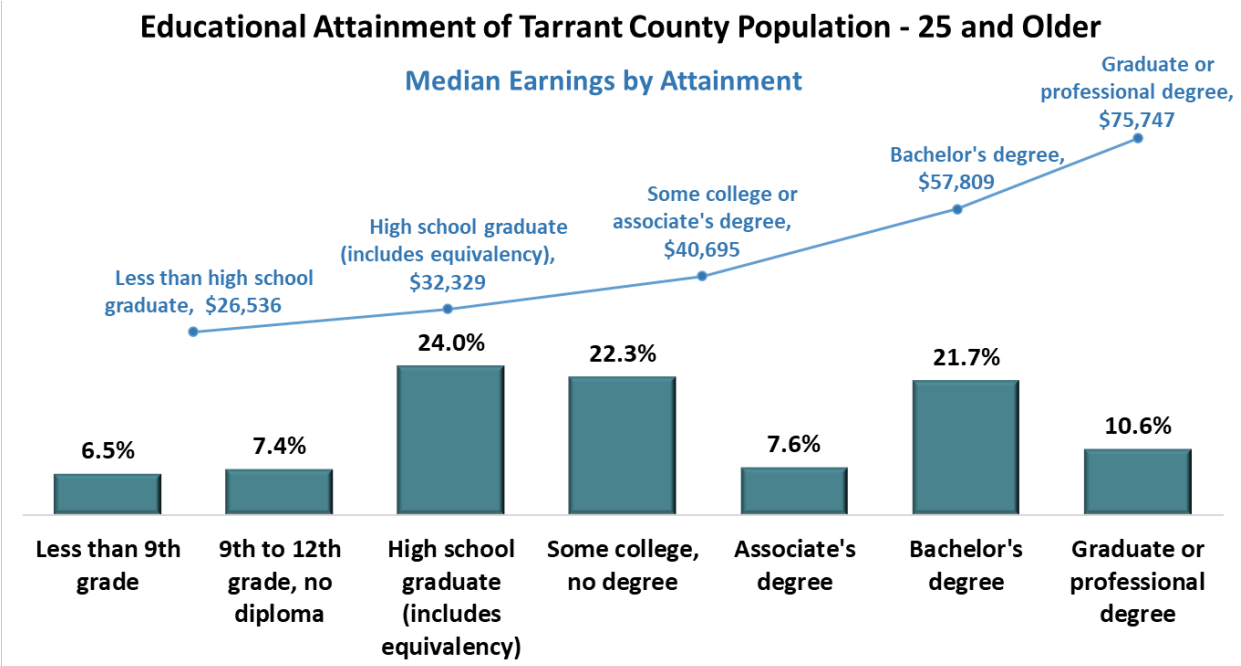**Attributed to Carly Fiorina*

CONTENTS

The Importance of Education
A Fight Against Poverty

Based on estimates from the 2019 American Community Survey (5-year estimates)[1], the highest educational attainment for almost 40% of the Tarrant County population aged 25 and older is high school or lower. Just over 30% are estimated to have attained a Bachelor's degree or higher. As an open access institution and one of the nation's largest providers of associate degrees[2], Tarrant County College serves a vital role with increasing educational levels which translates to higher earnings for many.
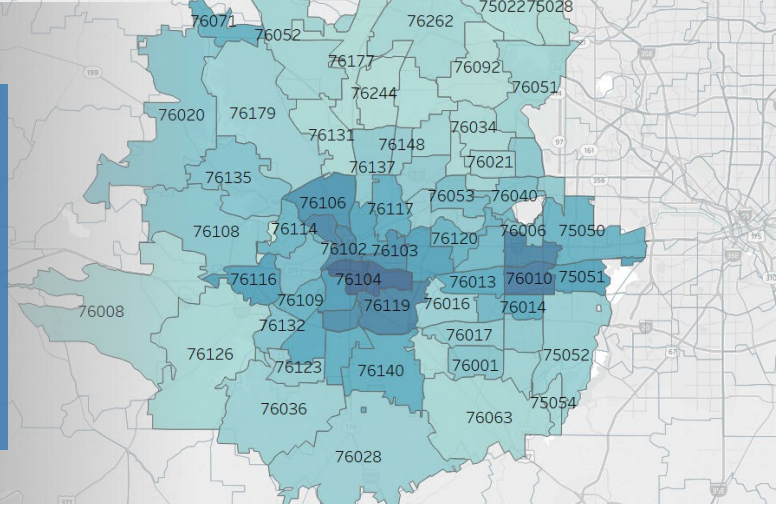
The estimated median earnings for those with some college or an associate degree is about $8,000 higher than high school graduates, and the estimated median earnings for those with a Bachelor's degree is about $25,000 higher than high school graduates. The median earnings of those with a graduate or professional degree is over $40,000 higher than high school graduates.

Note: Based on IPEDS data, TCC ranked 8th for number of associate degrees awarded (19-20)

Educational Attainment of Tarrant County Population - 25 and Older
Median Earnings by Attainment

Less than high school graduate, $26,536

High school graduate (includes equivalency), $32,329

Some college or associate's degree, $40,695

Bachelor's degree, $57,809

Graduate or professional degree, $75,747

| Category	Percentage
Less than 9th grade	6.5%
9th to 12th grade, no diploma	7.4%
High school graduate (includes equivalency)	24.0%
Some college, no degree	22.3%
Associate's degree	7.6%
Bachelor's degree	21.7%
Graduate or professional degree	10.6%

Poverty in Tarrant County
TCC's Part in the Solution

The estimated poverty rate for Tarrant County is about 12%, which is about 3 percentage points lower than the rate for Texas and about 1.5 percentage points lower than the rate for the nation. Large disparities exist within Tarrant County with the poverty rate by zip code ranging from less than 3% through about 34%.

Since earnings tend to increase as education level increases, areas with lower educational attainment tend to have higher rates of poverty. On average, for each additional percentage point increase in the percentage of population with no college within a zip code, the poverty rate for the zip code increases by about 0.3 percentage points.

Relationship between Poverty Rate & Educational Attainment by Tarrant County Zip Codes*
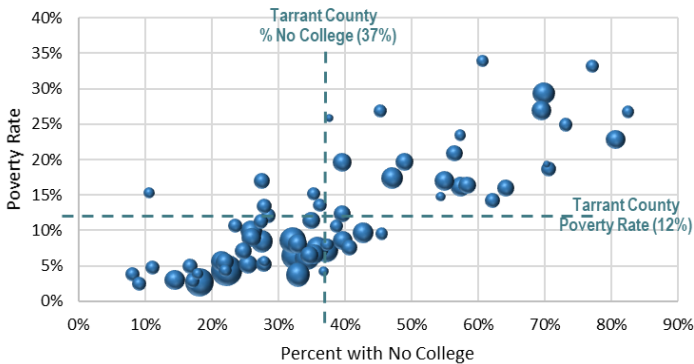
* The size of the bubble is proportional to the number of Fall 2020 students from the zip code. Zip codes with more than 100 students are displayed on the graph.

Sources:
[1] 2019 American Community 5-year Estimates - https://data.census.gov/cedsci/
[2] IPEDS (Integrated Postsecondary Education System) - https://nces.ed.gov/ipeds/datacenter/InstitutionByName.aspx?goToReportId=1
[3] Paying for TCC Survey - https://www.tccd.edu/documents/about/research/institutional-intelligence-and-research/surveys/ir-executive-summaries/executive-summary-paying-for-tcc.pdf
[4] Goals while at TCC Survey - https://www.tccd.edu/documents/about/research/institutional-intelligence-and-research/surveys/ir-executive-summaries/executive-summary-goals-while-at-tccd.pdf
[5] 60x30TX - http://www.txhigheredaccountability.org/AcctPublic/InteractiveReport/AddReport

Cost of Education

Without funds to attain education and training, those from impoverished backgrounds are at risk of being in a cycle of gernerational poverty as the cost of higher education may become a major barrier. Results from recent surveys suggest that paying for school is a concern for a large number of TCC students[3].
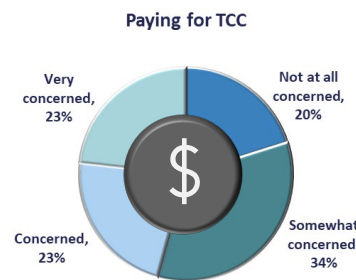
Paying for TCC

Of the 2,100 student respondents to a 2021 Spring survey about paying for TCC courses, **about 8 in 10** were **at least somewhat concerned** about paying for courses, and **roughly one in four** were **very concerned**.

Moreover, responses indicated cost as a major factor when choosing to enroll at TCC, and reducing the cost to go to school though financial aid, paying for textbooks, etc., as one of the top things TCC could do to help students achieve their college, career, and life goals[4].

41%
Cost – Top Reason for choosing TCC

21%
Reduce Cost – Top Way TCC can help students

About 1,100 students respondend to a 2021 Spring survey about goals while at TCC.

- While over 70% selected "location" and "cost" as reasons for choosing TCC, cost was overwhelmingly the top reason when asked to select just one choice (41%).
- Roughly 50% selected "help to transfer to four-year school" and "reduce my costs to go to school" as top ways TCC could help students achieve goals, and these choices were tied as the top choice when asked to select just one choice (21%).

TCC'S AFFORDABILITY

TCC is the second most affordable for tuition and fees when compared the Texas' "Big-ten" community colleges[5].

Tuition & Fees for 30 Hours

Collin County Community College District	$1,670
Tarrant County College District	$1,920
Houston Community College	$2,295
San Jacinto Community College District	$2,340
Dallas College District	$2,370
Austin Community College	$2,550
Lone Star College System	$2,805
Alamo Community College District	$3,112
El Paso Community College District	$4,080
South Texas College	$4,080
Texas Woman's University	$9,630
The University of Texas at Arlington	$11,620
University of North Texas	$11,994

Understanding the Importance of Education

In sum, when aligned with a local area's labor market, skills obtained through additional education and training are part of the solution in the fight against poverty. Thus, TCC is poised to play an integral role in changing the lives of many within the community it serves.

Considerations:

❖ The more information students have regarding expected earnings based on their skills, level of education, and program of the study, the more empowered they are to understand why pursuing higher education/advanced training makes them more marketable in the labor force and less likely to be in poverty.

❖ Students should be aware of TCC's resources that facilitate career exploration, create pathways from education and training for future jobs, and help reduce financial barriers.

❖ As a more affordable, open-access institution with a wide variety of programs and training, TCC is in a unique position to market education and training as an opportunity for everyone. Continuing this messaging may help break the possible mind-set of some that college is an option available only to the "wealthy elite".
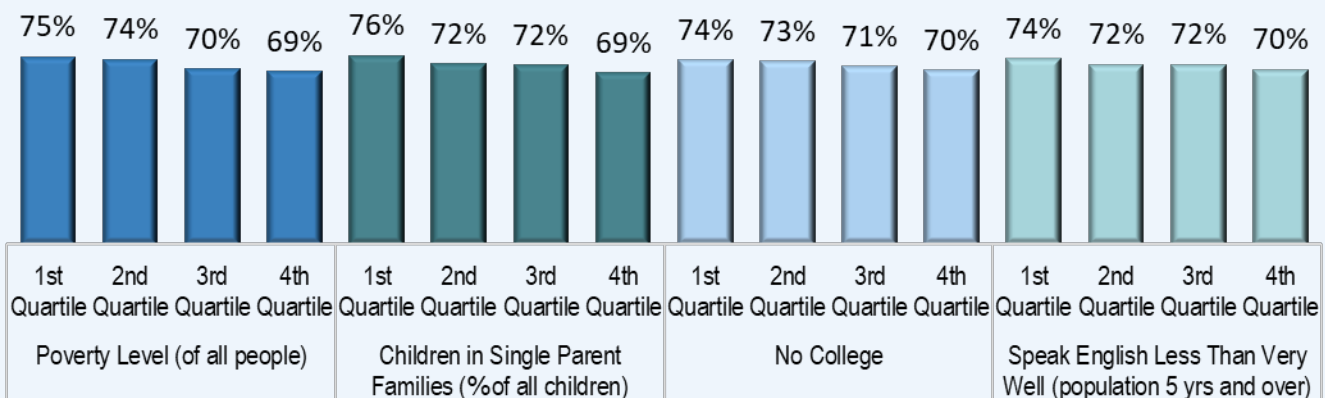
Community Demographics & Retention

Fall degree-seeking first time in college cohorts (2016-2020) from Tarrant County zip codes* were used to investigate the relationship between fall-to-spring retention and community demographics including poverty rate, percent of children in single parent families, percent with no college, and percent who speak English less than very well. Although the societal characteristics were not strong enough for a predictive model at the student-level, general group-level trends indicated that students from zip codes with a higher level of poverty, more children in single parent families, lower educational attainment, and more who speak English less than very well tend to be retained at lower rates.

For these variables, the retention rate for students in the 1st quartile is about 4 to 7 percentage points higher than students in the 4th quartile.

*Only students with Tarrant County zip codes were included (~95% of the entire DS-FTIC cohort).

Fall-to-Spring Retention Rates for DS-FTIC (2016-2020 Fall Cohorts)

Poverty Level (of all people)				Children in Single Parent Families (% of all children)				No College				Speak English Less Than Very Well (population 5 yrs and over)			
1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
75%	74%	70%	69%	76%	72%	72%	69%	74%	73%	71%	70%	74%	72%	72%	70%

TARRANT COUNTY DEMOGRAPHIC COMPARISONS

1

Are TCC dual credit students representative of Tarrant County high school students?

When looking at 2019-2020 academic year data, TCC dual credit students were not representative of Tarrant County high school students. About 40% of Tarrant County high school students were Hispanic, compared to 27% of TCC dual credit students. Conversely, about 43% of TCC dual credit students were White, compared to 30% of Tarrant County high school students. Lastly, about 59% of TCC dual credit students were female, compared to 49% of all Tarrant County high school students.

2

Are TCC students representative of Tarrant County residents?

With the latest 2020 Tarrant County Census Bureau data and 2019-2020 TCC academic year data, the TCC undergraduate student body was loosely representative of Tarrant County residents. TCC has a higher percentage of female students (about 59%) compared to female residents in Tarrant County (about 51%). As well, TCC has a higher percentage of Hispanic students (about 34%) compared to Hispanic residents in Tarrant County (about 29%).

3

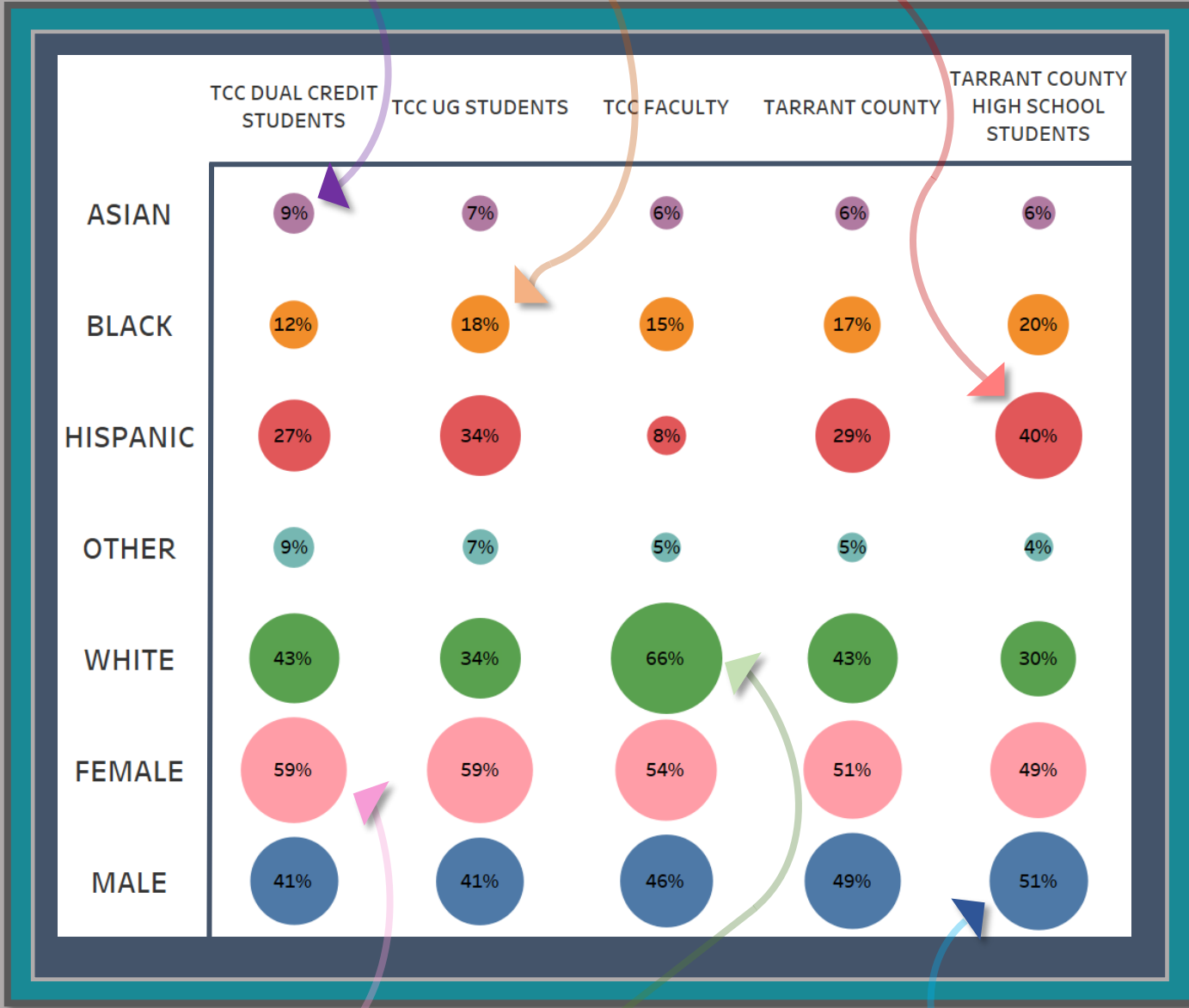### Are TCC faculty representative of the TCC student body?

For the 2019-2020 academic year, the TCC faculty body was not representative of the TCC undergraduate student body. The largest differences were seen comparing the White populations (about 66% of faculty compared to about 34% of TCC students) and the Hispanic populations (about 8% of faculty compared to about 34% of TCC students).

About 12% of TCC dual credit students were Black, **compared to about 18% of all TCC students** and 20% of Tarrant County high school students.

About **9% of TCC dual credit students were Asian**, compared to about 7% or less for all other populations examined.

Compared to TCC dual credit Hispanic students (27% of students), about **40% of Tarrant County high school students were Hispanic**.

	TCC DUAL CREDIT STUDENTS	TCC UG STUDENTS	TCC FACULTY	TARRANT COUNTY	TARRANT COUNTY HIGH SCHOOL STUDENTS
ASIAN	9%	7%	6%	6%	6%
BLACK	12%	18%	15%	17%	20%
HISPANIC	27%	34%	8%	29%	40%
OTHER	9%	7%	5%	5%	4%
WHITE	43%	34%	66%	43%	30%
FEMALE	59%	59%	54%	51%	49%
MALE	41%	41%	46%	49%	51%

Compared to Tarrant County high school female students (49% of students), about **59% of TCC dual credit students were female**.

About **51% of Tarrant County high school students were male**, the highest percentage of the examined groups.

While **two in three TCC faculty members were White**, about one in three TCC students was White.

A TCC CAMPUS IS JUST DOWN THE ROAD
Does location matter?

Tarrant County College was founded in 1965 with a single campus (South Campus). By 2010, TCC had expanded to five physical campuses serving a county with about 2 million people and its surrounding counties[1]. By 2015, TCC's reach expanded farther with the establishment of a virtual campus (TCC Connect Campus). Students attending a multi-campus District, like TCC, may consider many factors including the modality of instruction (online/face-to-face) and the convenience of a campus' physical location when deciding which campus(es) they attend.

Attending Multiple Campuses

Over the past several fall terms, a large percentage of students attended multiple campuses. In Fall 2021, **about 34% of full-time students attended multiple campuses – a slight increase** from Fall 2019 (32%). In Fall 2020, when campus location may have been a less influential factor due to almost all courses being offered through remote learning, about 53% of full-time students attended multiple campuses. While some students may attend at least two campuses due to a schedule with both online and face-to-face courses, **almost one in five full-time students who did not have any online courses attended multiple physical campuses** in Fall 2021.
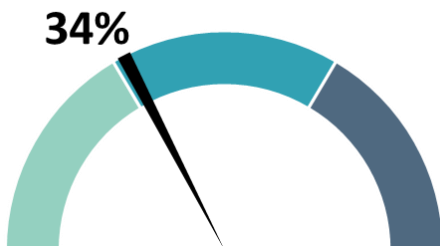
Students Attending Completely Online

Online enrollment has increased substantially over the last twenty years, and with the pandemic forcing students online for almost a year and half, online enrollment may again increase since students now have some online experience. The **percentage of full-time students who were enrolled completely online** more than **doubled** from about 6% in Fall 2019 to almost 15% in Fall 2021. Online enrollment trends for future semesters will help better determine to what extent this increase is due to a shift in preference towards online courses versus hesitancy towards taking face-to-face courses amidst a pandemic.

Choosing Online

Results from recent surveys as well as comments from course evaluations indicated students may choose online courses because they offer more flexibility. Students mentioned online courses fitting their schedules better due to other obligations such as a full-time job. Distance from home or work to school was not selected as a top reason for choosing online by survey respondents. Fall 2019 and Fall 2021 enrollment suggested that distance to campus may not be a strong factor when deciding to take some online courses but may have a larger impact

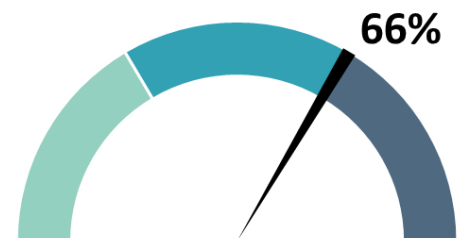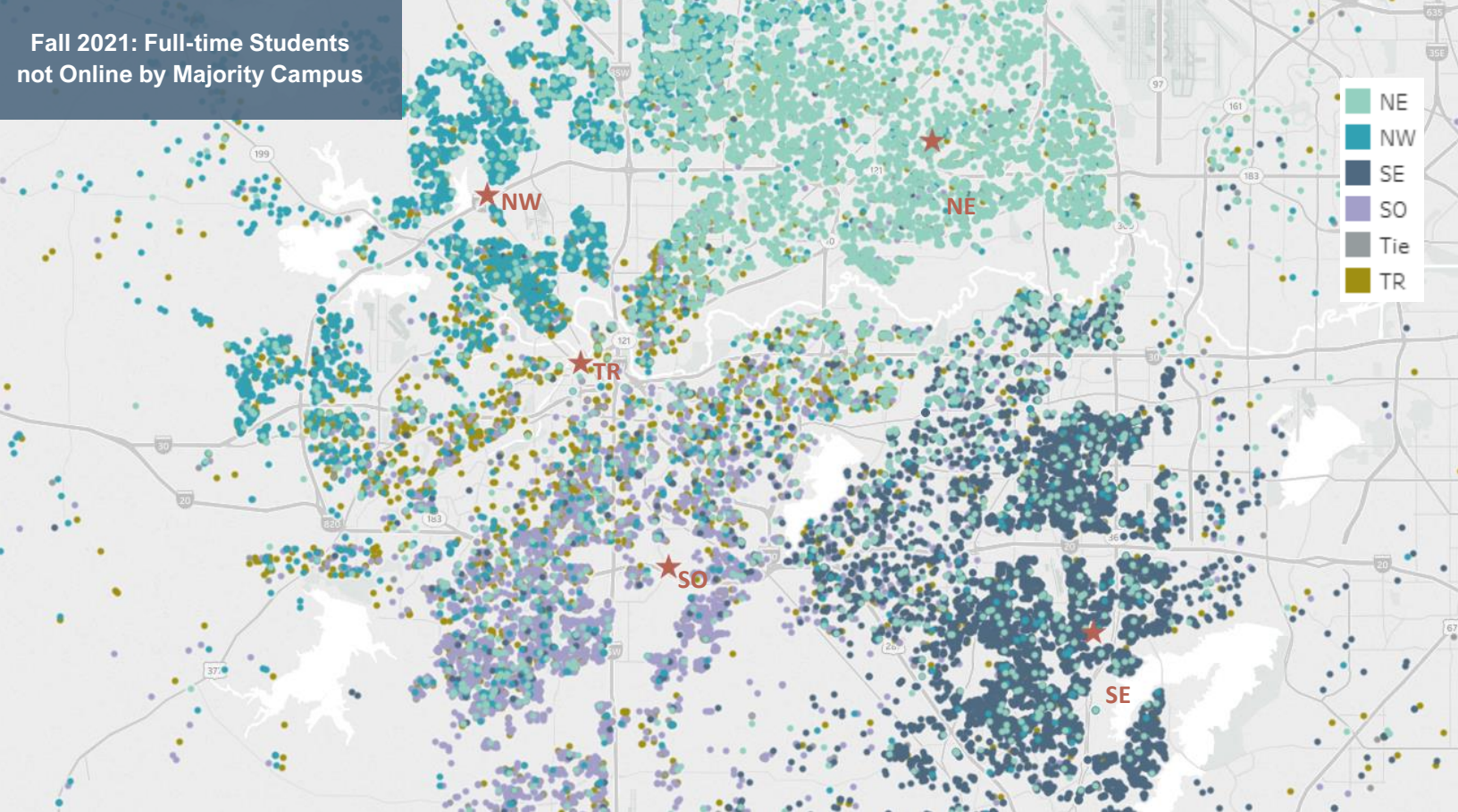**Fall 2021: Percent of Full-time Students Attending Multiple Campuses**

34%

Fall 2021: Percent of Full-time Students Completely Online

15%
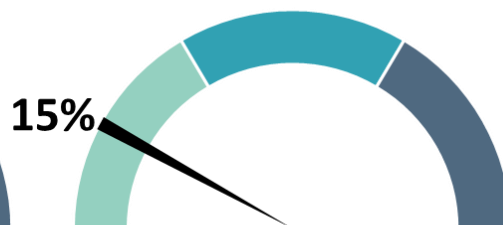
Fall 2021: Percent of Full-time Students not Online where Majority Campus = Closest Campus

66%

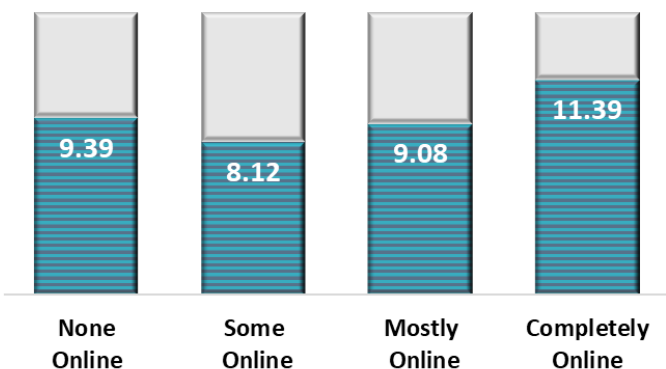Fall 2021: Full-time Students not Online by Majority Campus

when deciding to attend classes entirely online. The average distance to the nearest TCC campus for full-time students taking some online courses was smaller than the average distance for full-time students taking no online courses. However, **the average distance for full-time students completely online was larger**. *

Fall 2021: Full-Time Students' Average Distance (in miles) to Nearest TCC Campus

None Online	Some Online	Mostly Online	Completely Online
9.39	8.12	9.08	11.39

Choosing a Physical Campus

For Fall 2021 full-time students who did not take any online courses, **the "majority campus" for about two-thirds was the TCC campus closest to them**. This percentage of full-time students without online courses

whose majority campus was also their closest campus (66%) was a decrease from 2019FL (69%). (For Fall 2020, this percentage was 59%.)

Importance

In sum, with almost one-quarter of Fall 2021 full-time students taking both online and non-online courses and almost one-fifth of full-time students not online attending multiple physical campuses, many students are interacting with TCC as "One College" instead of a single location. Thus, these students should have a "One College" experience with smooth transitions between locations and equal access to resources regardless of teaching modality or campus. Lastly, meeting students' needs may mean evaluating the number of online or hybrid offerings if demand for these options has truly increased.

Online Group: based on % online with None Online = 0%, Some Online = Greater than 0% to less than 50%, Mostly Online = 50% to less than 100%, and Completely Online = 100%

Majority Campus: campus at which the student was enrolled in the most semester hours

Closet Campus: campus with the minimum distance to the student's address

*Geocodes were found for about 90% of students' addresses. Distance statements were based on students who could be geocoded.
Source: Enrollment by Term (Census Day – no credit type N)

[1] https://data.census.gov/cedsci/table?q=Tarrant%20County%20population&tid=DECENNIALPL2020.P1

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CHOOSING COMPLETELY ONLINE: *What factors matter?*

In the previous article, a student's distance from their nearest TCC campus was examined as a potential factor for enrolling completely online. Now, online enrollment for Fall 2021 is analyzed to determine if it differs based on various demographics including gender, ethnicity, and age group.
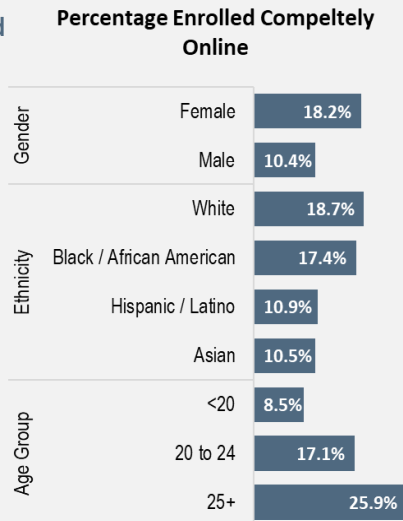
Enrollment Data

For the approximately 9,000 full-time students in Fall 2021:

More Likely to be Enrolled Completely Online

Females about 1.8 times more likely than males

Whites and Blacks/ African Americans about 1.6 to 1.8 time more likely than Hispanics/Latinos or Asians

25 and older about 1.5 times more likely than 20 to 24 and about 3 times more likely than under 20

Percentage Enrolled Compeltely Online

Gender	Female	18.2%
	Male	10.4%
Ethnicity	White	18.7%
	Black / African American	17.4%
	Hispanic / Latino	10.9%
	Asian	10.5%
Age Group	<20	8.5%
	20 to 24	17.1%
	25+	25.9%

Source: Enrollment by Term (Census Day – no credit type N)

Obligations outside of school such as work, childcare, and access to resources may also be deciding factors in choosing online courses. These were explored using a recent TCC survey of students.

Survey Data

About 2,200 students responded to a survey regarding preferences for the course schedule that was administered in November 2021. Results suggested that working, caring for dependents, and access to a reliable device, internet connection, and mode of transportation are important factors when selecting a completely online schedule.

For full-time respondents (N = 950):

Respondents who worked 40 or more hours per week were about 2.4 times more likely to prefer a completely online schedule than those who did not work.

Respondents who cared for dependents 40 or more hours per week were about 2.1 times more likely to prefer a completely online schedule than those who did not care for dependents.

Respondents without reliable transportation to campus were about 2.0 times more likely to prefer a completely online schedule than those with reliable transportation.

Respondents with a reliable device were about 1.2 times more likely to prefer a completely online schedule than those with without a reliable device.
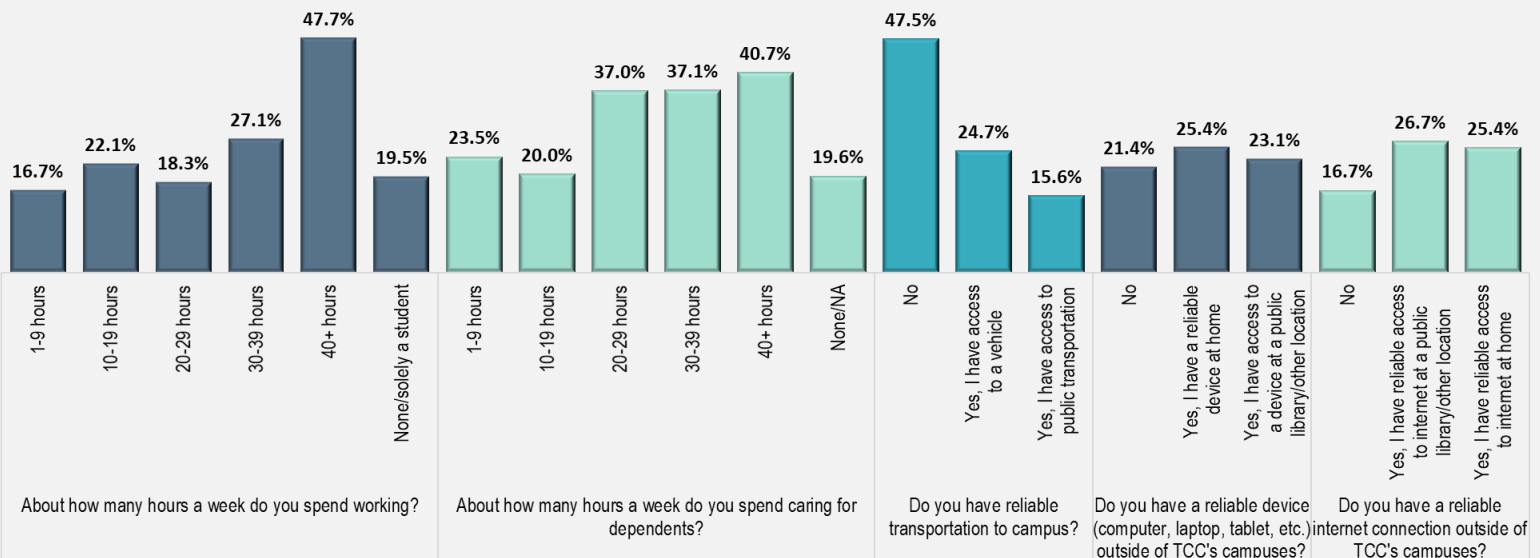
Respondents with a reliable internet connection were about 1.5 times more likely to prefer a completely online schedule than those with without a reliable internet connection.

Note for full-time respondents: About 5% stated "No" to reliable transportation. Almost 2% stated "No" to reliable device, and almost 1.5% stated "No" to reliable internet connection.

Source: 2021 Fall Student Preferences on the Schedule Survey

Percentage of Respondents who Prefer Completely Online
2021 Fall Student Preferences on the Schedule Survey

About how many hours a week do you spend working?						About how many hours a week do you spend caring for dependents?						Do you have reliable transportation to campus?			Do you have a reliable device (computer, laptop, tablet, etc.) outside of TCC's campuses?			Do you have a reliable internet connection outside of TCC's campuses?		
1-9 hours	10-19 hours	20-29 hours	30-39 hours	40+ hours	None/solely a student	1-9 hours	10-19 hours	20-29 hours	30-39 hours	40+ hours	None/NA	No	Yes, I have access to a vehicle	Yes, I have access to public transportation	No	Yes, I have a reliable device at home	Yes, I have access to a device at a public library/other location	No	Yes, I have reliable access to internet at a public library/other location	Yes, I have reliable access to internet at home
16.7%	22.1%	18.3%	27.1%	47.7%	19.5%	23.5%	20.0%	37.0%	37.1%	40.7%	19.6%	47.5%	24.7%	15.6%	21.4%	25.4%	23.1%	16.7%	26.7%	25.4%

DATA DEMOCRATIZATION: FROM THEORY TO PRACTICE

Robert Lorick & Holly Stovall

"Data democratization means that everybody has access to data and there are no gatekeepers that create a bottleneck at the gateway to the data. … The goal is to have anybody use data at any time to make decisions with no barriers to access or understanding."

- June 24, 2017, article in Forbes Magazine

GOALS

The goal is clear - widespread and instantaneous access to data. In spirit, this opening of the "data gates" removes a level of bureaucracy and empowers all individuals at all levels across an institution. Data become a shared asset where everyone has ownership and accountability. Thus, everyone is responsible for shaping the future of an organization and reaching its long-term goals. As a prime example, we use data across TCC to work toward our shared vision of student and community success – each playing a role in the intuition's metrics with improvements in numbers reflecting all our efforts. Through collaboration among cross-functional teams, we gain new insights through diversity of thought as individuals from various areas of an organization bring new perspectives and differing expertise.

IMPORTANT CONSIDERATIONS

While giving all stakeholders access to data is good in theory, in practice systems for supporting data democratization must be well-designed and carefully implemented. At its foundation, there are many ethical, legal, privacy issues to consider, and data governance, who gets access to what, is of paramount importance. In addition, access to all data could led to duplicated efforts if work is not properly communicated and shared. Moreover, duplicated efforts could lead to silos of information which endanger the concept of single source or truth. Specifically, when discrepancies occur, trust in the data is lost, and work is brushed away with statements like "your numbers are wrong". Questions arise as to who is responsible for resolving discrepancies, and too much time may be lost reconciling "errors" that

are not truly mistakes but rather differences in usage and definitions. Hence, the need for a common understanding of the data and definitions underpins the success of data democratization. Data must be placed in the proper context since the environment in which it is collected is ever evolving. Having a thorough understanding and broad view of an institution can help differentiate changes reflected in the data as meaningful patterns due to possible changes in student preferences and behaviors or anomalies caused by new definitions, policies, and procedures. Knowledge management is critical to establish a repository of documentation of historical changes and is the platform for agreed upon protocols. Most importantly, data gain their most value when considered as a response to a well-framed research question.   Proper training can bolster this required data literacy.

IN PRACTICE

Data democratization exists on a spectrum from complete access for all with little oversight to access for a few with total control given to one group. The benefit likely is strongest when institutions avoid the extreme ends of this scale.   TCC moves towards data democratization with self-service and a multitude of reports, tables, and dashboards with readily available and accessible information that has been vetted for reliability and accuracy and designed to promote a common understanding.

So, take advantage of the data deluge, benefit in the ease of use, remain aware of impactful changes, and know that IR is here to support your data journey.

Courses Taken Together

As students create their course schedules, they may consider which courses they want to take simultaneously. Some may choose to fill their term with courses representing a wide variety of subject areas while others take courses from within the same subject area.

Using course enrollment data from Fall 2018, 2019, and 2020, "course pairings" were established by creating all pairs within a student's schedule. For example, a student who took four courses (e.g. MATH-1314, ENGL-1301, HIST-1301, & GOVT-2305) had six course pairings. From these combinations, courses commonly taken together and their "paired" successes were determined.

Top College-Level Pairings

These 20 course pairings accounted for roughly one in ten course pairings. **ENGL-1301 was part of half of these top course pairings.**

1	ENGL-1301	HIST-1301	11	ENGL-1302	GOVT-2305
2	ENGL-1301	MATH-1314	12	ENGL-1301	MATH-1342
3	ENGL-1301	GOVT-2305	13	ENGL-1302	HIST-1301
4	ENGL-1301	PSYC-2301	14	ENGL-1301	ENGL-1302
5	GOVT-2305	HIST-1301	15	ECON-2301	ENGL-1301
6	HIST-1301	MATH-1314	16	GOVT-2306	HIST-1301
7	HIST-1301	PSYC-2301	17	ENGL-1301	MATH-1332
8	ARTS-1301	ENGL-1301	18	GOVT-2305	PSYC-2301
9	GOVT-2305	MATH-1314	19	HIST-1301	SOCI-1301
10	ENGL-1301	SPCH-1311	20	GOVT-2306	HIST-1302

Course Pairings in Same Subject Area For College-Level and Dev Ed

Overall, when both courses were from the same subject area, both courses were successfully completed about 75% of the time, whereas when the courses were from different subject areas, both courses were successfully completed about 60% of the time. However, certain subject areas differed markedly. When both courses were in Math, for example, the successful completion rate of both courses was about 50%. For a pairing within nursing (RNSG), the successful completion rate of both courses was about 91%.
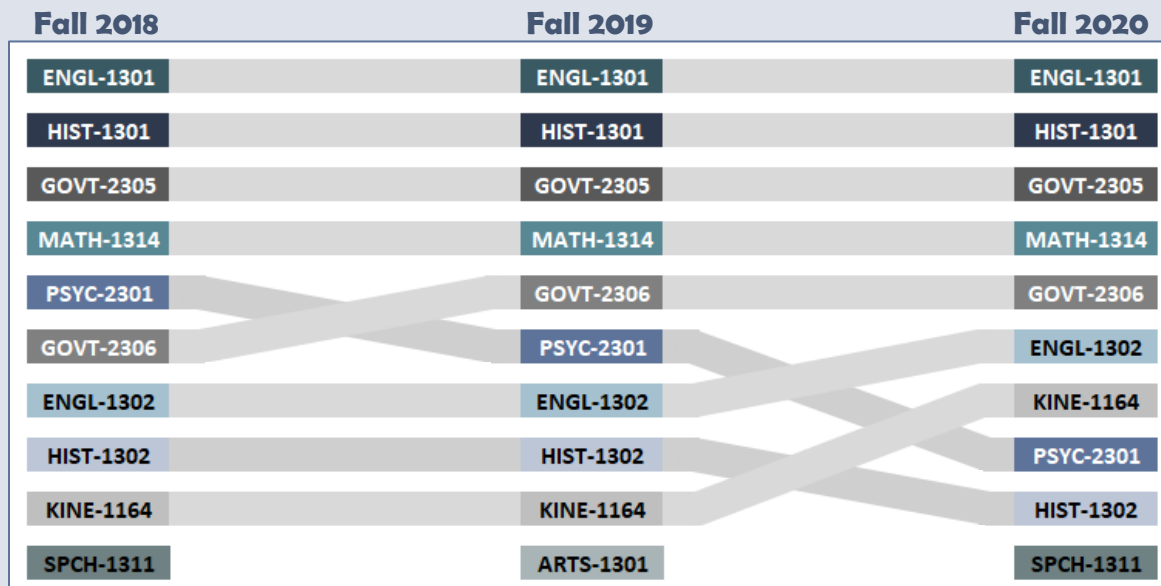
Network for Top-20 College-Level Pairings:
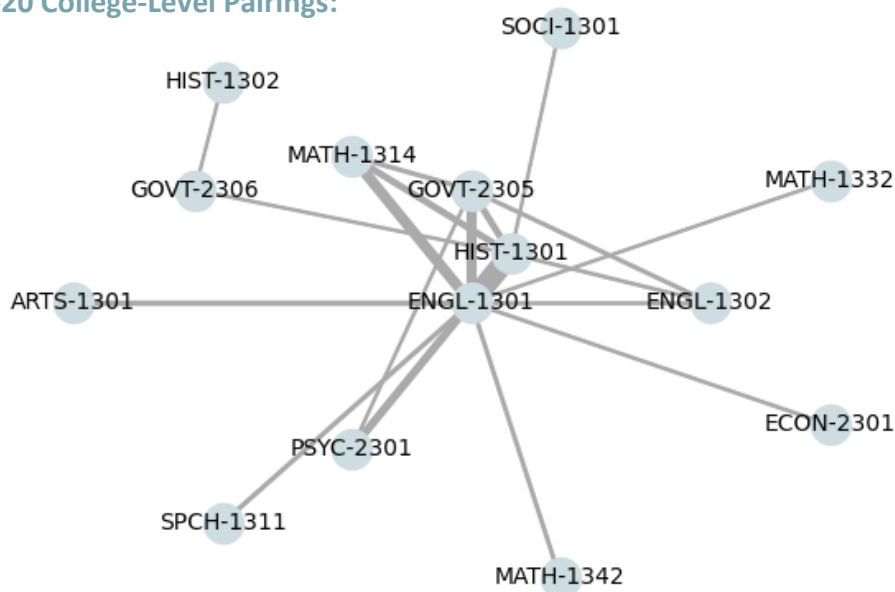
The top 20 course pairings (2018 Fall, 2019 Fall, 2020 Fall) are shown above. Each edge is weighted by the number of enrollments shared between the pairs of courses

Source: ST Student Enrollment & Demographics (no credit type N, audits and missing grades removed)

Top-Ten High Enrollment College-Level Courses for Fall 2018, Fall 2019, and Fall 2020

High enrollment in a course is a contributing factor in course pairings. The top-ten college-level courses have remained consistent with the top-four being the same each fall. The top-ten accounted for about 35% to 40% of total course enrollment each fall.

Fall 2018	Fall 2019	Fall 2020
ENGL-1301	ENGL-1301	ENGL-1301
HIST-1301	HIST-1301	HIST-1301
GOVT-2305	GOVT-2305	GOVT-2305
MATH-1314	MATH-1314	MATH-1314
PSYC-2301	GOVT-2306	GOVT-2306
GOVT-2306	PSYC-2301	ENGL-1302
ENGL-1302	ENGL-1302	KINE-1164
HIST-1302	HIST-1302	PSYC-2301
KINE-1164	KINE-1164	HIST-1302
SPCH-1311	ARTS-1301	SPCH-1311

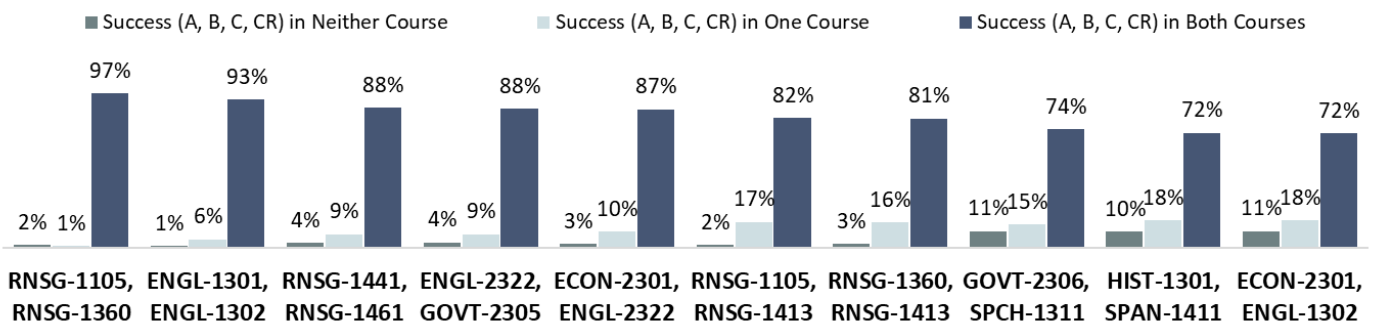## Most & Least Successful College-Level Pairings

The most successful pairings included two pairs of nursing courses. Among more general education courses, ENGL-1301/ENGL-1302 had a high success rate with about 93% of students passing both when taken in in the same term.

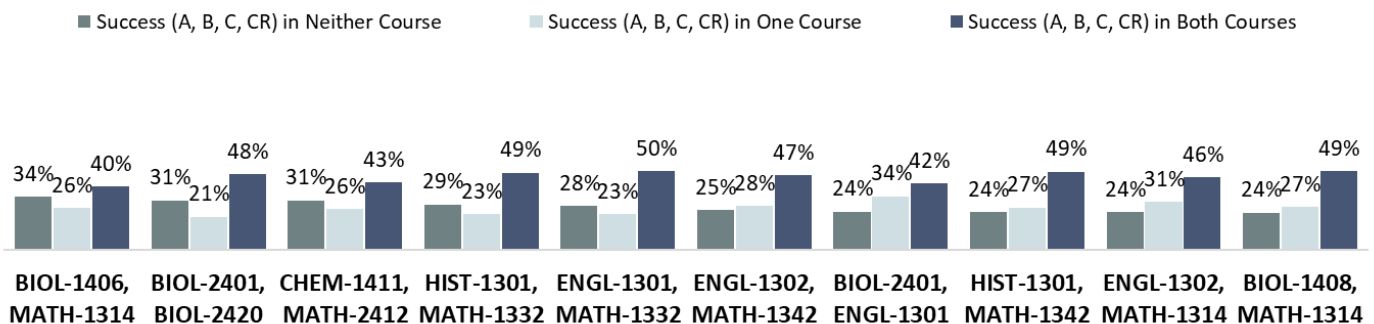- *Most and least successful pairings were based on pairings with at least 500 enrollments.*

Considerations

- Common course pairings could foster interdisciplinary discussions about making connections between course curricula.

- Successful course pairings of general education courses could be used to form learning communities.

Most Successful College-Level Course Pairings

■ Success (A, B, C, CR) in Neither Course   ■ Success (A, B, C, CR) in One Course   ■ Success (A, B, C, CR) in Both Courses

	RNSG-1105, RNSG-1360	ENGL-1301, ENGL-1302	RNSG-1441, RNSG-1461	ENGL-2322, GOVT-2305	ECON-2301, ENGL-2322	RNSG-1105, RNSG-1413	RNSG-1360, RNSG-1413	GOVT-2306, SPCH-1311	HIST-1301, SPAN-1411	ECON-2301, ENGL-1302
Neither	2%	1%	4%	4%	3%	2%	3%	11%	10%	11%
One	1%	6%	9%	9%	10%	17%	16%	15%	18%	18%
Both	97%	93%	88%	88%	87%	82%	81%	74%	72%	72%

Least Successful College-Level Course Pairings

■ Success (A, B, C, CR) in Neither Course   ■ Success (A, B, C, CR) in One Course   ■ Success (A, B, C, CR) in Both Courses

	BIOL-1406, MATH-1314	BIOL-2401, BIOL-2420	CHEM-1411, MATH-2412	HIST-1301, MATH-1332	ENGL-1301, MATH-1332	ENGL-1302, MATH-1342	BIOL-2401, ENGL-1301	HIST-1301, MATH-1342	ENGL-1302, MATH-1314	BIOL-1408, MATH-1314
Neither	34%	31%	31%	29%	28%	25%	24%	24%	24%	24%
One	26%	21%	26%	23%	23%	28%	34%	27%	31%	27%
Both	40%	48%	43%	49%	50%	47%	42%	49%	46%	49%

The TSI Assessment, or the Texas Success Initiative Assessment, is a way for colleges in Texas to determine if a student is college ready.

The assessment is administered in two sections: mathematics and reading/writing. Several assessment exemptions exist, including ACT, SAT, or TAKS test scores, military and veteran service, and transferring from another higher education institution.

Who takes the TSI assessment?

About 850,000 assessment sections taken by about 150,000 students were included in this analysis.

- 57% were taken by female students
- 35% were taken by Hispanic/Latino students
- 30% were taken by White students
- 21% were taken by Black or African American students
- 63% were taken by students aged 15-18
- 63% of students took one or more assessment types only one time
- 23% of students took at least one of the assessment types twice

TSI
Texas Success Initiative

How are TSI assessments scored?

One or two scores determined a student's course placement: a college readiness classification score and a diagnostic level score, dependent upon the college readiness classification score.

Prior to January 2021, the college readiness classification scores ranged from 310 to 390, while the TSI2 scores implemented in 2021 ranged from 910 to 990.

Since the change in scoring, math placements have not changed when compared to the old scoring system. However, the English placements have changed, with a much larger percentage now being placed into Adult Basic Education than in the past.

When are TSI assessments taken?

When looking at each day a student took one or more sections of the TSI assessment, about 38% of the testing days occurred over the summer months of June, July, and August.

Initiatives involving local ISDs, TCC dual credit students, and early collegiate high school students have provided students with the opportunity to take the TSI assessment during school, seen possibly as the spike in assessments administered in April.

Test dates ranging from August of 2013 through October of 2021 were included in this analysis.

Fall 2013 - TSI first implemented

Fall 2017 – TSI scoring changed

Fall 2020 – 75% of remedial courses in corequisite model

Fall 2021 – 100% corequisite model

June 2017 – HB2223 launched with corequisite model

Fall 2018 – 25% of remedial courses in corequisite model

January 2021 – TSI2 launched

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	0%	0%	0%	0%	0%	0%	0%	4%	10%	19%	44%	23%
2014	6%	6%	6%	14%	10%	11%	14%	17%	2%	3%	6%	4%
2015	7%	4%	5%	12%	11%	12%	14%	17%	2%	3%	7%	6%
2016	6%	6%	8%	13%	9%	12%	13%	15%	3%	4%	7%	5%
2017	6%	8%	10%	14%	9%	9%	12%	14%	3%	5%	6%	5%
2018	6%	7%	11%	13%	10%	10%	12%	11%	3%	5%	7%	4%
2019	7%	8%	10%	12%	10%	10%	13%	10%	3%	5%	7%	4%
2020	9%	18%	5%	1%	4%	5%	13%	23%	4%	5%	6%	7%
2021	5%	5%	9%	11%	13%	11%	12%	25%	6%	3%	0%	0%

When looking at each day a student took one or more sections of the TSI assessment, a majority of test dates were in April, July, or August (shown in green). About 12% of test dates were in April, and collectively, over a quarter of test dates (28%) were in July and August. September was historically the least active month for TSI assessments, averaging about 2-3% of test dates annually. The April testing surge may be attributed to testing at high schools.

Time of Year

Over 80% of tests taken in April were by students 19 and under; however, in July or August students over the age of 18 accounted for about 34-43% of assessments.
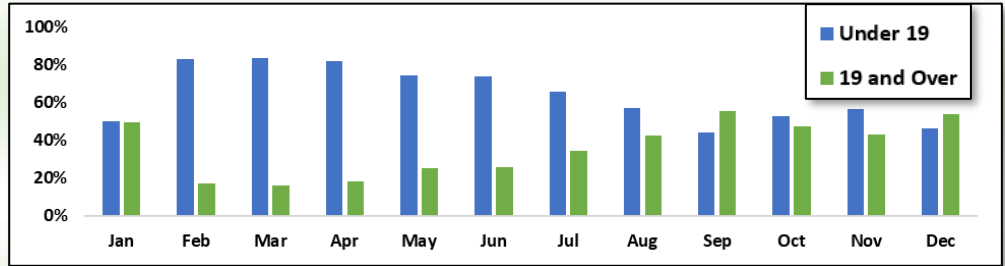
Math Placement

English Placement

Annually, about 20-30% of math assessments resulted in college level course placement and about 60% of students tested into developmental education.

Prior to the TSI2 assessment implementation in January of 2021, about 14-18% of math assessments resulted in adult basic education; however, the new scoring has resulted in 12% placement into adult basic education.

About 3 in 4 students took the math assessment only one time, and about 16% took the assessment twice.

Prior to the TSI2 assessment implementation in January 2021, about 40-52% of English* scores placed students as college-ready and 47-55% were placed into developmental education.

However, the TSI2 assessments through October 2021 placed over half of English assessments (about 55%) into adult basic education, and about 29% into college level coursework.

About 70% of students took the English/Reading assessment only one time, and about 20% took the assessment twice.
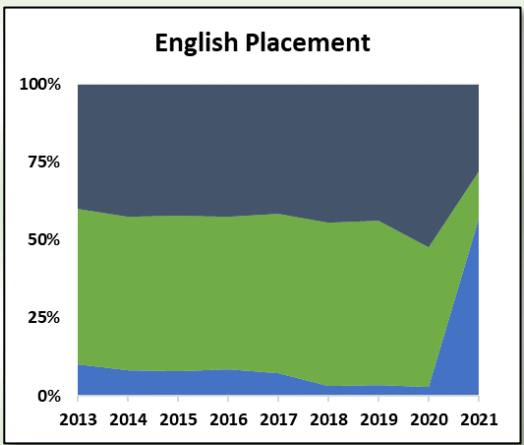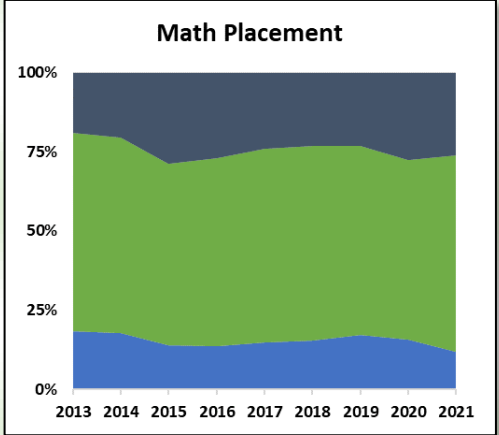
* English placement scores were determined by taking the minimum of the reading/writing assessments and English assessment, when applicable

# SECOND YEAR EXPERIENCE
Does GPA improve?

Does gaining a year of college experience translate to a more successful second-year experience for those who return for a second year? To determine whether first-year performance is a strong indicator for second-year performance, the second-year GPAs of the 2015 to 2019 first time in college (FTIC) cohorts were compared to their first-year GPAs for returning students who had 12 or more hours towards GPA in both their first and second years.

Relationship between First-year GPA and Returning a Second-year

The fall-to-fall retention rate for all FTIC students was 56%, meaning almost 4 in 10 students did not return for a second year. For FTIC students who remained enrolled in at least 12 hours in their first year (i.e. earned A, B, C, D, or Fs, which are hours towards GPA), the retention rate was 73%. Overall, the fall-to-fall retention rate for FTIC students who had 12 or more hours towards GPA in their first year increased as first-year GPA increased. For example, the retention rate for those with GPA between 2 and 2.49 (77%) was about five percentage points lower than students with a GPA of 3 or higher (83%).

Fall-to-Fall Retention by GPA Group: FTIC Students with 12 or More Hours Towrds GPA in First Year
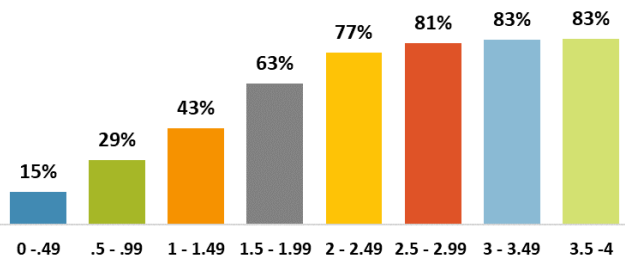
First-year GPA – calculated based on all courses taken the Fall, Spring, or Summer of the FTIC student's first year.

Second-year GPA – calculated based on all courses taken the Fall, Spring, or Summer of the FTIC student's second year. This GPA is not cumulative since it excludes first-year courses.

Source: ODR, Enrollment by Term

## First-year GPA compared to Second-year GPA

Distribution of First-year & Second-year GPAs

For FTIC students who had at least 12 hours towards GPA in both their first year and second year, the distribution of second-year GPAs was similar to the distribution of first-year GPAs with both having a median of 3.0 and a 75th percentile of 3.5. However, more students had a 2.5 or lower for their second year GPA which made the average second-year GPA slightly lower.

	25th Percentile	Median	75th Percentile	Mean	Standard Dev.
First-year GPA	2.5	3.0	3.5	2.9	0.7
Second-year GPA	2.3	3.0	3.5	2.8	0.9
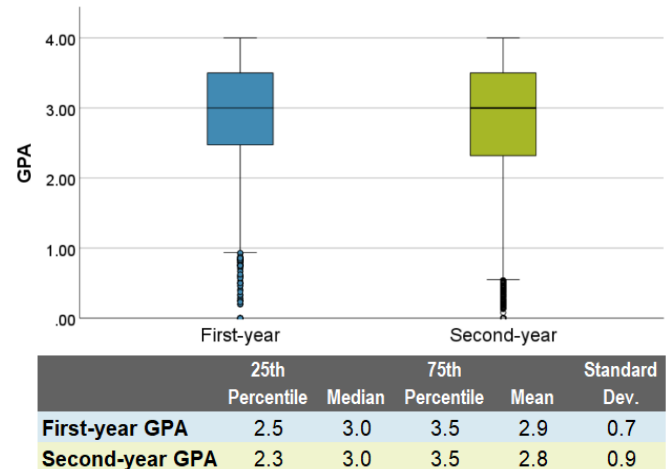
Change in GPA

On average, second-year GPA was about 0.1 grade points lower than first-year GPA. About 25% of students' GPAs decreased 0.5 or more grade points while another 25% increased 0.3 or more grade points.
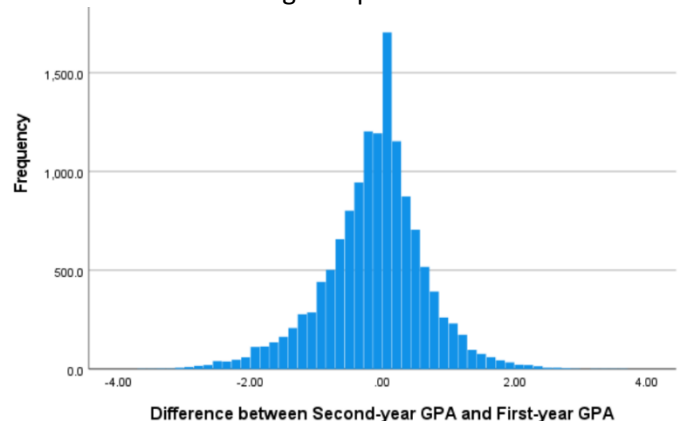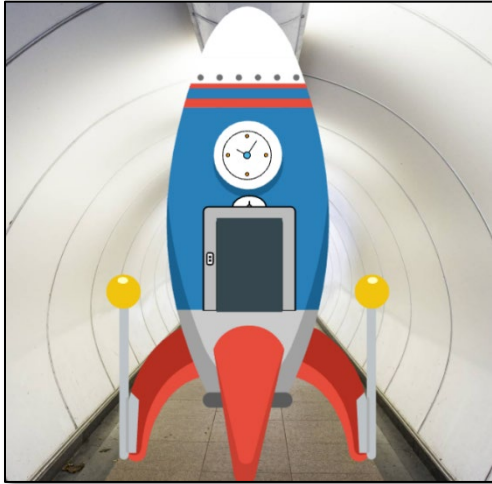
THE DAILY STAT

TIME MACHINE LOCATED AT TCC CAMPUS

Reporter: Dan Dumas

A time machine was reportedly spotted above the Institutional Research office. Witnesses claim to have seen two individuals climb into the contraption, disappear, and then return unscathed.

It is unclear if the supposed time travel trip served any purpose.

More information about the sighting can be found in **Episode 4, "Highlighting TCC's History."**
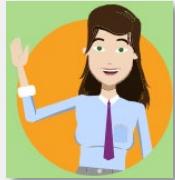
DEAR DABBY,
I recently went for it all on Jeopardy, only to be made the biggest fool. It was awful. How can I defend my honor?
- JADED FROM JEOPARDY

JADED FROM JEOPARDY,
Sounds like you have a case of trigger-buzzer. Take a breath before you talk next time. See more on **Episode 3, "Figuring Formula Funding."**

Got ideas? Let us know!

Data's Anatomy is IR's in-house video series, made to clarify important data terminology, calculations, and easily confused data concepts. Find them on our website!

SEASON 7 🍿 NOW SHOWING

Episode 1: Developing Dashboards
Episode 2: Creating Co-Reqs
Episode 3: Figuring Formula Funding
Episode 4: Highlighting TCC's History
Dataline: The Life and Times of a Data Request
Dataline: Percent Change vs Change in Percent

Data's Anatomy FUNNIES

Daph, it's a snow day!

I'm making snow angles!
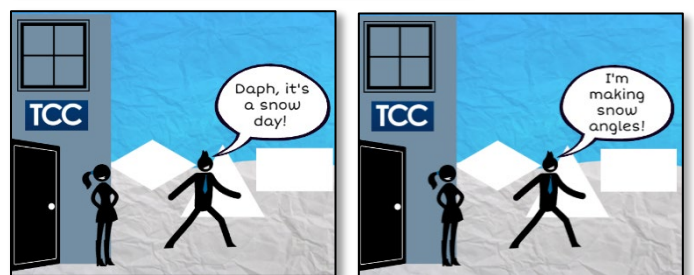
DASHBOARDS
DATA ON DEMAND

In an age of instantaneous results, click-and-receive delivery, and concierge-style service, data democratization is the new reality for Institutional Research offices. The development of dashboards offers a solution, by providing end users the ability to visualize and export results on demand.

Through dashboards, data are updated at the end of the term, allowing for the tables and graphs to reflect the most recent information. The ability to filter data easily gives the end user ownership and liberty with the data selection. Dashboards also ensure consistent messaging and branding are being shared across constituents.

Dashboards provide **access** to data in a variety of formats – visually, graphically, or in tabular form. The **multifaceted** variety in presentation allows for connections to be made, information to be **digestible**, and actionable steps to be made. The **interactive** format gives freedom to explore data, such as adding and removing filters. How dashboards are set up keeps data more **current** and applicable to needs of the time. And importantly, dashboards allow for data **transparency** and accountability.

The Office of Institutional Research created a repository of dashboards accessible through the IR website. Dashboard topics include:

- Core Curriculum
- Course Enrollments
- Programs
- Demographics and Zip Code Data
- Success Rates
- Retention
- Transfer & Graduation Rates
- Completions
- Faculty
- Time Blocks
- Tutoring Services
- IPEDS

The example below shows the "Completions" dashboard, located in the Summary Dashboard.

1. The initial view displays the completions for all programs across the District.
2. Selecting "NE" under Campus limits the data to only completions made at the Northeast Campus.
3. Filtering to "Degrees" displays only associate level programs.
4. And, selecting "AART.D001.UG" shows the completions for the Associate of Arts degree.

Source: https://www.tccd.edu/about/research/institutional-intelligence-and-research/dashboards/
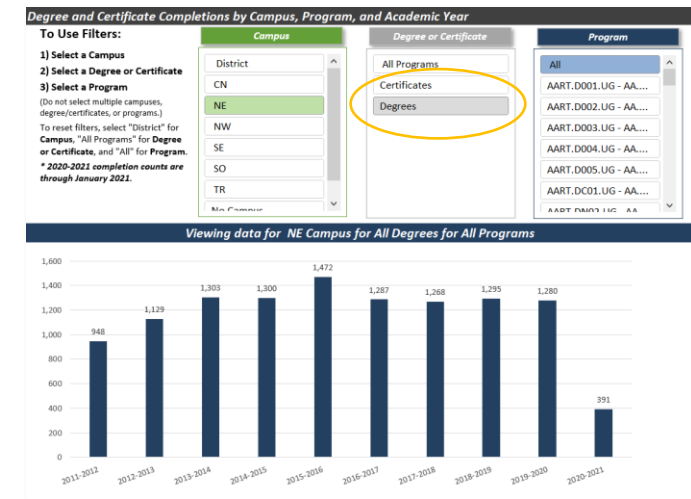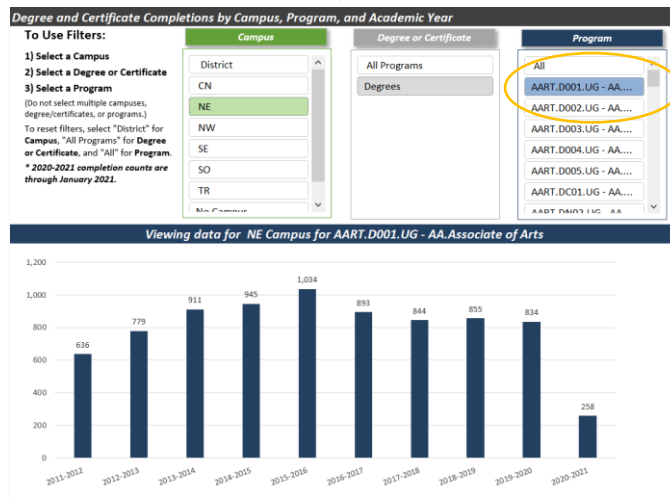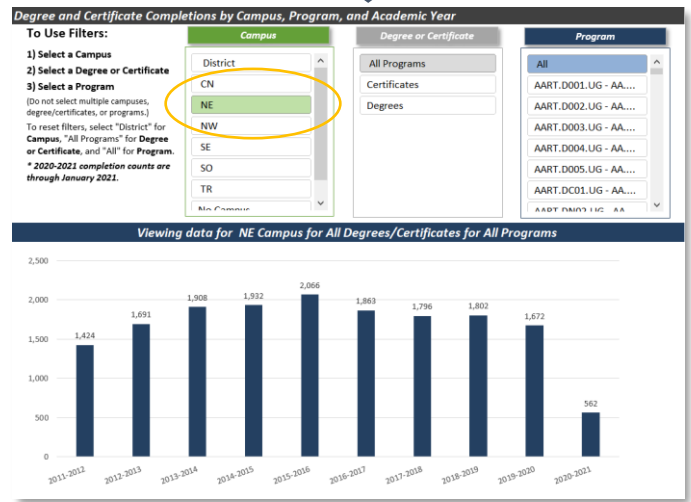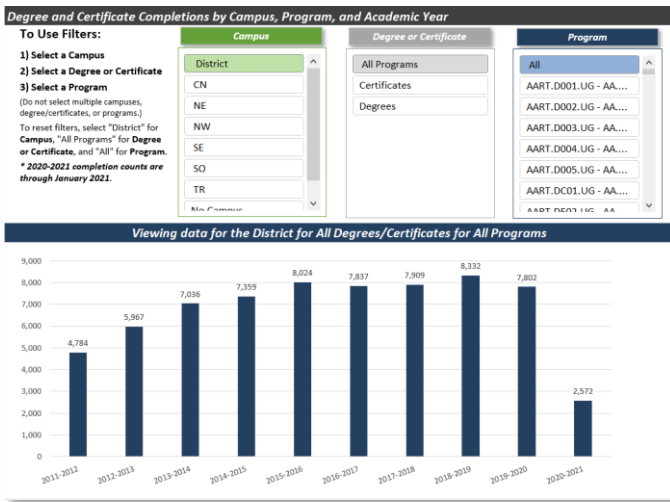
Repeats.

The first review of data on repeats provided an overview of the number of repeats, commonly repeated courses, and possible connections to success. The second edition of "Repeats" further explored the demographics of repeaters and potential predictors of repeats. This final edition of "Repeats" examines the grade distribution at TCC over time, related to repeated courses.

For this analysis, only A, B, C, D, F, and W grades from 2004FL through 2021SU were examined and divided into the following groups:

1. A student's first or only attempt in a course
2. A student's final or only attempt in a course

The percentage of grades per academic year in each group was then compared year over year.

Key Findings

- The average **success rate of students' first attempt at a course was about 73%**, compared to about 79% for the final attempt.
- The percentage of A final grades was about **1.8 percentage points higher** than the percentage of A first grades.
- The percentage of W final grades was about **2.7 percentage points lower** than the percentage of W first grades.

Grade	% First	% Final	Difference
A	33.5%	35.3%	1.8
B	24.7%	27.0%	2.3
C	14.8%	16.5%	1.7
D	4.5%	3.6%	-0.9
F	9.6%	7.5%	-2.1
W	12.8%	10.1%	-2.7
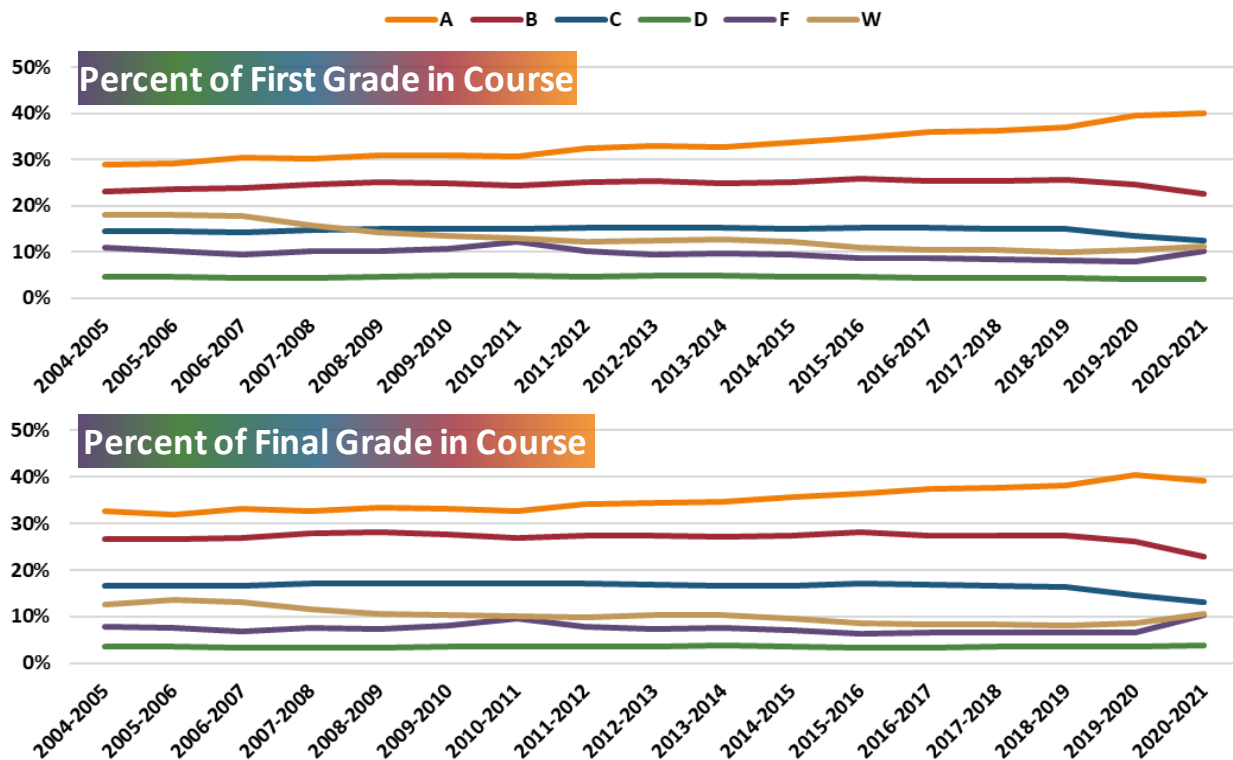
Source: Enrollment by Term (excludes N, missing grades, labs, CR/NC grades (<.05% of grades), and audits)

Summertime at TCC
Students from 4-year Schools

Thoughts of summer might be filled with "time off" spent sitting on a beach or relaxing pool-side, but roughly 25,000 students enrolled at TCC each summer term from 2017SU to 2021SU to take advantage of summer as additional time for coursework. Specifically, students who attended a four-year school in the fall/spring enrolled at TCC during their summer break.

Students from 4-year Schools

Each summer term, about one in four summer students had attended a 4-year school the prior fall/spring. Top colleges of those summer students who attended a 4-year school in the prior fall/spring included:

- 🏖️ **University of Texas at Arlington – about 25%**
- 🏖️ **University of North Texas – about 10%**
- 🏖️ **Texas A&M University – about 5%**
- 🏖️ **Tarleton State University – about 5%**

Top Courses

The top-ten courses for students from 4-year schools included history, government, math, English, accounting, and biology and accounted for about one-third of the total summer course enrollment for students from 4-year schools.

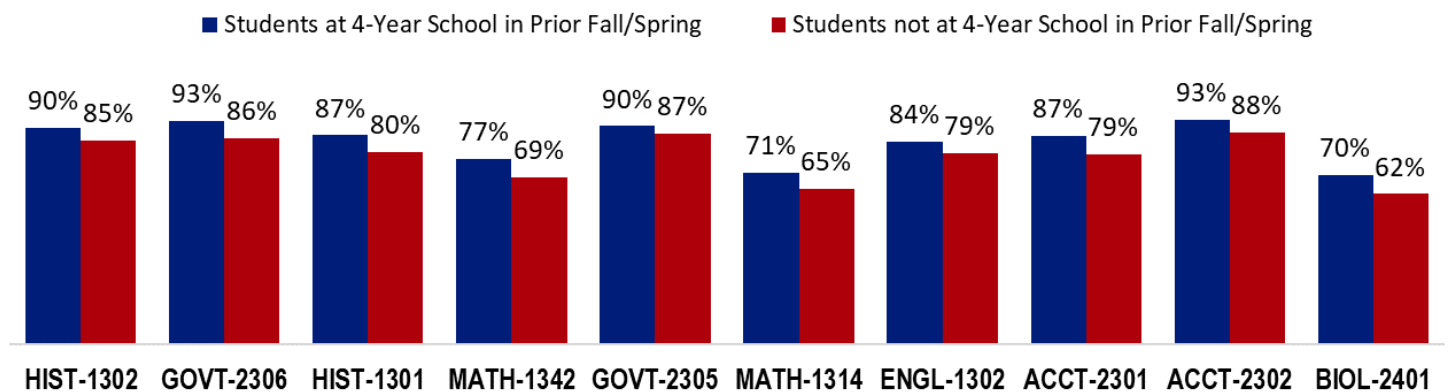| Course	%	Cum %	Course	%	Cum %
HIST-1302	5%	5%	MATH-1314	3%	23%
GOVT-2306	4%	9%	ENGL-1302	3%	26%
HIST-1301	4%	13%	ACCT-2301	3%	28%
MATH-1342	3%	17%	ACCT-2302	3%	31%
GOVT-2305	3%	20%	BIOL-2401	2%	33%

Success

Historically, summer success rates have been about 8 to 10 percentage points higher than fall or spring. The summer success rate of students who attended a 4-year school the in prior fall/spring (83%) was about three percentage points higher than students who had not attended a 4-year school the prior fall/spring (80%).

Among the top-ten courses, the gap in success rates was consistently wider. Students who recently attended a 4-year school outperformed students who had not by about eight percentage points in GOVT-2305, ACCT-2302, and BIOL-2401.

In sum, about one-quarter of summer students were fall/spring students from 4-year schools, and their summer success rate of 83% was about three percentage points higher than other students.

Summer Success Rates - 2017SU to 2021SU

■ Students at 4-Year School in Prior Fall/Spring   ■ Students not at 4-Year School in Prior Fall/Spring

Course	At 4-Year School	Not at 4-Year School
HIST-1302	90%	85%
GOVT-2306	93%	86%
HIST-1301	87%	80%
MATH-1342	77%	69%
GOVT-2305	90%	87%
MATH-1314	71%	65%
ENGL-1302	84%	79%
ACCT-2301	87%	79%
ACCT-2302	93%	88%
BIOL-2401	70%	62%

Source: Enrollment by Term (no credit type N) and National Student Clearinghouse files

MEET THE DATA SLAMMERS:
THE PEOPLE BEHIND THE DATA

Kira Barrington
Assistant Executive Director

*"Slamming the Data for
14 years strong!"*

Path to TCC's IR:
- B.B.A. in Management Information Systems from Lamar University
- M.S. in Information Systems from Tarleton State University

Claim to Fame:
- Keeping up appearances (IR Website)
- Satisfying the government (IPEDS, LBB, & THECB Reporting and SACS Accreditation efforts)

Fun Facts:
- Most Likely to find the extra space between two words in a 60-page report
- Hobbies: Reading, Needlepoint, Spending time with family & dogs

1) WHAT LED YOU TO INSTITUTIONAL RESEARCH?

Happy accident. After graduate school, I thought I wanted to be an instructor. I'd heard that TCC was a great place to work, and in 2007, the College was really growing. An analyst position became available in the Office of Institutional Research, and I applied. After 14 years, I'm still here.

2) WHAT IS YOUR FAVORITE PART OF YOUR ROLE?

My role as Assistant Executive Director is multi-faceted. From overseeing the State Reporting Team to managing IR's website, my workdays are never the same. But my favorite part is working alongside an amazingly talented group of people every day. GO TEAM IR!

3) HOW DO YOU SPEND YOUR TIME OUTSIDE OF IR?

I spend time with my family and two dogs. I also enjoy reading and playing board games.

4) DESCRIBE YOURSELF IN THREE WORDS.

Loyal
Detail-oriented
Kind

5) WHAT INSPIRES YOU?

| Family | Friends | Team IR |
| Nature | A good book | Music |

****

"Sunrise" by Kira Barrington [2007]

Morning arrives
As the night surrenders
To the emerging amber glow.
The fire-like radiance
Illuminates the city in
Breathtaking intensity.
The once star filled sky
Is now a blanket of color
With shades of pink and purple
Taking center stage.
And as the brilliance of
God's masterpiece
Consumes the horizon,
The bright new day
Brings hope for things
Only seen in dreams.

Get in Touch

Tarrant County College®
SUCCESS WITHIN REACH.

Have you found a particular article interesting or used some research from IR Corner? Let us know!

"You can have data without information, but you cannot have information without data."

— Daniel Keys Moran

Every day, we are inundated with data from our colleagues, friends and family members, social media platforms, news entities, and more. The art, however, is sifting through these data to ensure accuracy, finding connections, crafting a story, and making actionable steps. Data mean nothing without context. The IR team is dedicated to providing the most accurate and relevant information to better promote student and community success. We are eager and ready to assist with your research needs, so please stay curious about the world around you.

- Team IR | One IT