Going from Data to Insights: Lessons from Higher Education

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Going from Data to Insights
Lessons from the Technical College System of Georgia

Alice Zimmerman

Director, Business Intelligence

Overview

- About TCSG
- Our Data Journey
- Data Strategies
- How TCSG Uses Data
  - Understand Trends
  - Monitor Progress
  - Drive Change
- Data Examples

About TCSG

- **Technical Education**
  - Degree, diploma, and certificate level
  - High school initiatives (DE, DAP)
  - 22 colleges, 88 campuses, 600+ programs
- **Adult Education**
  - HSE, Career Plus, IETs
  - 30 local adult education programs
- **Economic Development (Non-Credit)**
  - Customized Contract Training
  - Continuing Education
  - 2K companies and 45K employees trained
- **Workforce Development**
  - WorkSource Georgia
  - Training and upskilling for meaningful employment
  - 19,242 served in 19 workforce development areas
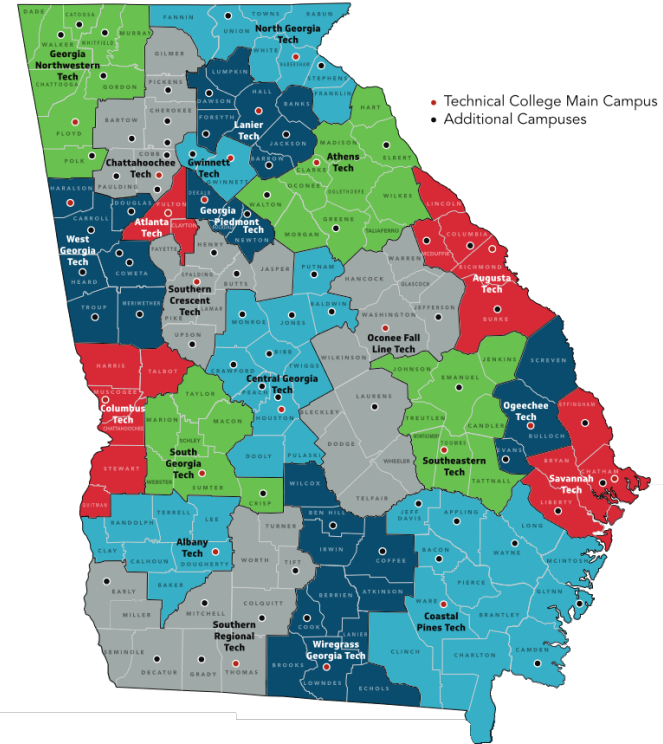
Our Data Journey: Then and Now

Then

- Crystal Reports, SQL Exports, Cognos 10, Excel
- Grid/tabular/basic visualizations
- Static/low-interactivity
- Few drill downs
- User cannot change parameters

Now

- Cognos Analytics (11.2.2)
- Aesthetically pleasing
- Ease of use
- Contextual menus
- Customizable (data elements, format, filters)
- Interactive dashboards
- Integrated data sets

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Our Data Journey: Data Strategies

- Seamless Transition
  - Who Moved My Cheese?
  - Tailored Strategies for Non-Technical and Technical Users
- Ready Made Reports
  - President Dashboards
  - College Reports (Student Rosters)
  - Answer Common Data Questions
- Empower Users
  - User Training
  - Ease of Use (Drag and Drop Customizations)
  - Democratization of Data
  - Answer Specific Ad Hoc Data Questions

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Our Data Journey: Data Strategies

- Data Governance
  - Data and Standards, Edit Checks, Clean MIS Reports
  - Data Integrity (edit checks, package filters)
- Data Confidence
  - Centralized Ticket System
  - Consistent and Documented Methodology (One Answer)
  - TCSG v. Public Reports (YTD v. Final Data)
- Data Integration
  - Reporting from Multiple Databases (e.g., Adult Ed Career Plus)
  - Data Sharing with Other Agencies (MOUs) (e.g., GDOE, BON, NSC)
- Report Performance and Security
  - Report Efficiency
  - User Access and Permissions

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Why are Data Analytics Important?

Helps us understand:

- Where we have been
- How we are progressing
- Which direction to go
- How we can get there

Data are used to:

- Understand trends
- Monitor performance
- Research questions
- Funding requests
- Deep dives and insights
- Program reviews
- Resource planning
- Drive change

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Some Examples

…of how TCSG uses data to make an impact

Data are used to:
Understand Trends
Monitoring Progress
Drive Change

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Historical Trend Analysis

- Descriptive data
- Most common and simplest data usage
- Review trends and patterns and outliers
- Answers the questions:
  – Where have we been?
  – How did we do?
- Examples:
  – Scorecard metrics
  – Enrollment trends, graduation data

Scorecard: Technical Education
MES0200

Technical Education

Enrollment: Total Credit Enrollment

	2019	2020	2021
Albany	4,407	4,281	4,172
Athens	6,300	6,271	5,596
Atlanta	5,536	5,804	4,841
Augusta	6,085	5,806	5,388
Central Georgia	12,048	11,459	11,725
Chattahoochee	14,943	14,696	13,450
Coastal Pines	5,352	6,332	5,479
Columbus	4,769	4,899	4,439
Georgia Northwestern	7,730	8,591	8,528
Georgia Piedmont	4,829	4,707	3,819
Gwinnett	12,468	12,721	11,578
Lanier	5,846	6,660	6,915
North Georgia	3,606	3,798	3,463
Oconee Fall Line	2,262	2,591	2,478
Ogeechee	2,919	2,946	3,029
Savannah	5,774	5,778	5,547
South Georgia	3,083	3,079	2,587
Southeastern	2,571	2,595	2,437
Southern Crescent	7,139	7,647	7,627
Southern Regional	6,153	6,564	5,707
West Georgia	10,112	9,949	8,913
Wiregrass Georgia	6,908	6,576	5,426
TCSG	140,840	143,750	133,144

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Data to Monitor Progress

Answers the question:
- How are we doing?

Examples:
- eCampus Implementation
- Governor's High-Demand Careers

- Reports and dashboards for strategic initiatives/investments
- Provide insights that otherwise would not have been observed
- Descriptive and diagnostic analytics
- Informs leadership discussions and decision making
- Used to gauge levels of participation
- Demonstrate impact to funders
- Allows for course correction

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Monitoring eCampus Implementation

- $10.4M in Governor's Emergency Education Relief Funds
- Shared resources instructional model for online courses
- Students enroll in courses taught by other technical colleges
- Scale up fast and demonstrate success
- Actionable data at our fingertips
- Demonstrate Return on Investment (ROI)
  - credit hour and enrollment growth
  - courses offered
  - courses consolidated
  - student grades

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eCampus At a Glance

TCSG eCampus growth since 2020:

- 5,000 students taking over 400 courses
- All 22 colleges participating
- 800 courses consolidated to 435
- Saving instructional dollars for 360 courses
- Drill down by college and term
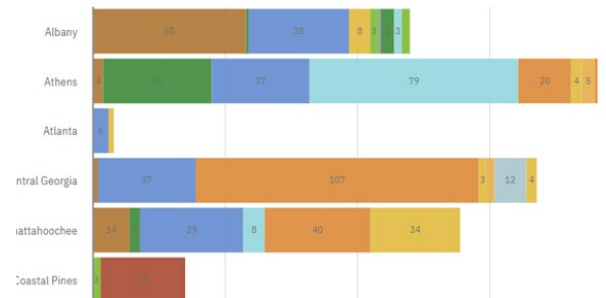- Detailed student demographics

eCampus Enrollment Statistics

4,943	435	22
Student Count	Host CRN Count	Host College Count

177		
Course Offerings		

6.74K	794	22
Seat Count	Home CRN Count	Home College Count

Demographics

Gender

Race

Age
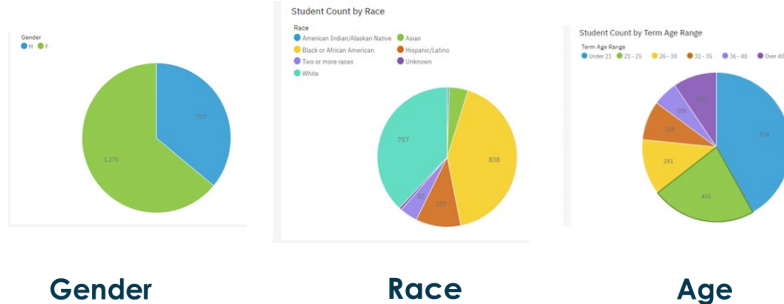
Student Count by Host College

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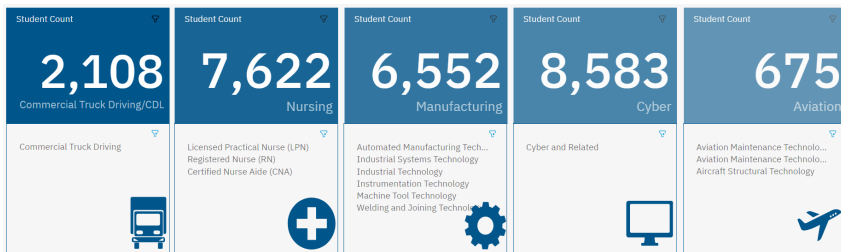
Governor's High-Demand Careers

Grow the Workforce Pipeline in Five Areas:
- Commercial Truck Driving
- Nursing
- Manufacturing
- Cybersecurity
- Aviation Technology

Used to monitor enrollment and inform discussions about growing the workforce pipeline.

Targeted Industries
TES0527

Enrollment
Reporting Period: Academic Year 2022 (20221%)

Industry Group	Student Count	Hours
Aviation	675	13,390.0
Commercial Truck Driving/CDL	2,108	18,379.0
Cyber and Related	8,583	132,338.0
Manufacturing	6,552	101,466.0
Nursing	7,622	109,757.0
Summary	**25,499**	**375,330.0**

Drills down by program group, major, award level and college.

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Data to Drive Change

Answers the questions:

- Where should we go?
- How can we get there?

Examples include:

- Workforce gaps
- Enrollment
- Student success

- Dashboards and reports to improve performance
- Deep dive into data
- Lazer-focused data insights
- Correlations to understand why
- Descriptive, diagnostic and limited predictive analytics
- Inform program reviews, workforce development, strategic direction
- Support data-driven decision making

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Drive Change: Workforce Gap Analyses

Supply and Demand: Gap Analysis
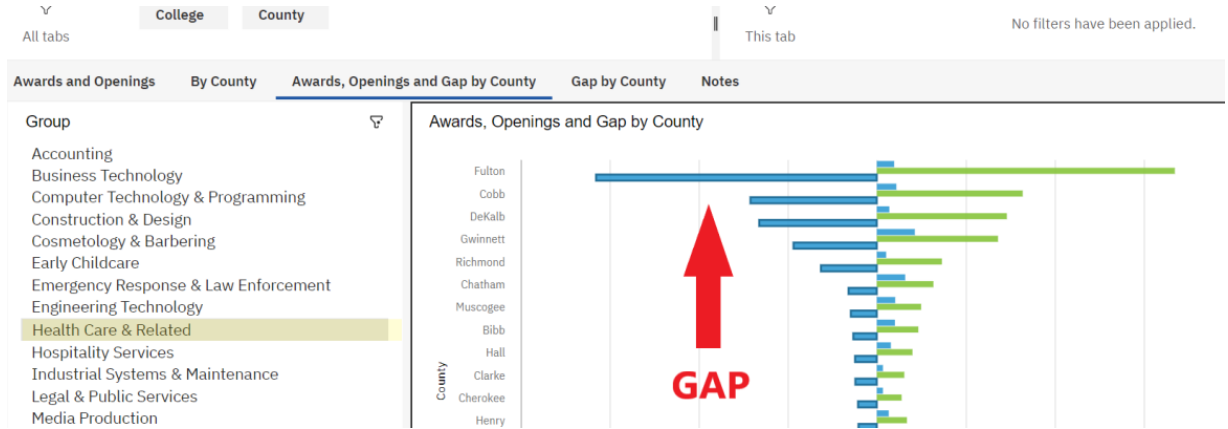
Divergent Bar Chart

- Map openings and graduates by county
- Filter down by industry
- Gap analysis to inform programming decisions
- Grow workforce pipeline

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Drive Change: Enrollment

Enrollment Analyses

- Growth Highlight Dashboard

- Showing areas of growth/decline by:

  – Demographic

  – Traditional/High School Comparison

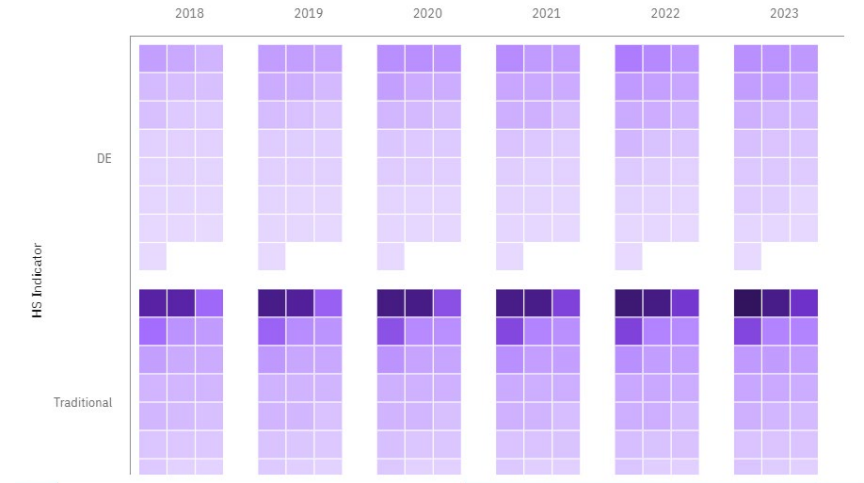 – Program area

  – Instructional delivery model

  – College

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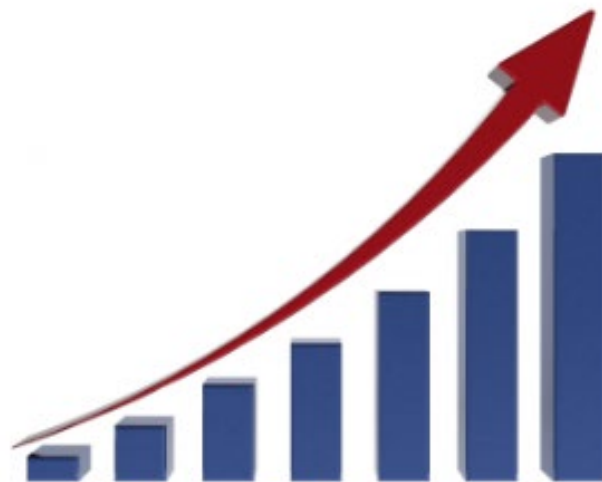
Drive Change: Enrollment

Traditional Student Growth by Program

Demographic Enrollment by College

Drive Change: Enrollment

Enrollment Analyses

- "Stop Out" to re-engage students who have not enrolled for one or more semesters.

- Helpful following Covid, where TCSG students withdrew from nearly 25,000 classes due to COVID-related reasons in Spring 2020.

Drive Change: Enrollment

Enrollment Analyses

- "Must Take" report identifies students with only a few courses remaining

- Used to boost enrollment among:

  - Students <u>not</u> currently enrolled: an opportunity to reconnect

  - Under-enrolled students: Boosts credit hour enrollment among part-time students during pre-registration

- Keep students on track to completion
- Boost enrollment
- Reengage "stopped out" students
- Adjust instructional offerings based on course needs
- Drive up enrollment and completions

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Through data analytics, we can:

- Gain more insights
- Dive deep to understand relationships and correlations
- Pin-point areas to drive improvement
- Strategically allocate resources to optimize impact

Which allows us to:

- Observe and understand trends
- Monitor progress on strategic investments
- Drive change and focus resources

In order to help our students succeed!

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"It doesn't matter how much data you have, it's whether you use it successfully that counts."

Thank You!

Questions?

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