



# Data-Informed Decision Making in Times of

May 2020



## Acknowledgements

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- Susan Mayer, Chief Learning Officer, Achieving the Dream

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## Introduction

### Data-Informed Decision-Making in Times of Disruption

Since its inception, Achieving the Dream has championed both:

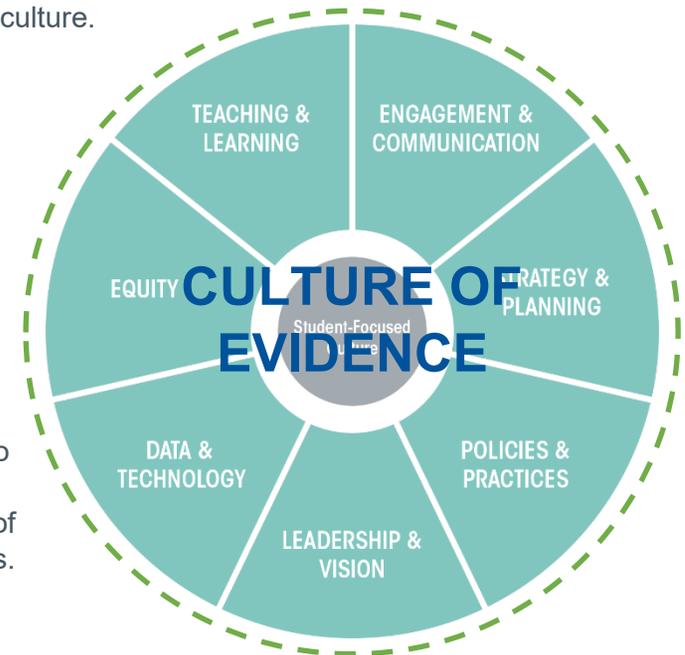
- **Culture of inquiry** in which institutions ask thoughtful questions and challenge assumptions; and
- **Culture of evidence** in which colleges engage in a continual process to collect, analyze, share, discuss, and use a wide range of relevant data to inform their practice, prioritize actions, and guide efforts to improve student success.

Strong institutions assess their cultures of inquiry and evidence by using learning and reflection tools like ATD's Institutional Capacity Assessment Tool (ICAT). They proactively build additional capacity in data and technology and other core capacities in the Institutional Capacity Framework to create and sustain a thriving student-centered culture.

We are living in a highly disruptive time, characterized by:

- Volatility
- Uncertainty
- Complexity
- Ambiguity

The values that support a culture of inquiry and evidence and guide leaders through decisions during disruption are the same - learner-focused, equity, transparency, collaboration, trust, and continuous improvement - but the application of them is more urgent. New issues continue to surface and important priorities are often in conflict. Leaders at all levels in an organization are required to learn much more quickly, with imperfect and often inconsistent information, to transition successfully from management of the immediate crisis to establishment of innovative, adaptive, and resilient systems for thriving on the other side of the crisis.





Research about organizational effectiveness shows that having a compelling mission, clear goals, and a talented team are necessary but not sufficient conditions for building these systems. Teams that outperform follow processes for working together that include formal structures for facilitated deliberation, a focus on joint inquiry (vs. advocacy), participant diversity, and a climate of psychological safety. These teams perform best when given opportunities to take smart risks, make mistakes, and learn rapidly. They examine relevant data, identify patterns and trends, and use process tools to explore, probe, and test potential outcomes, frame key decisions, assess performance, and rework problems on a continuous basis.

This Guide was developed to provide decision-support to institutional leaders to build stronger adaptive and resilient organizations in three of the areas impacted most by COVID-19:

- Student learning
- Student supports and
- Enrollment management

In each key area there are a set of guiding questions, data to consider, areas for disaggregation to understand different or inequitable impacts, methods, data sources, and the frequency/timing for monitoring the data. Decisionmakers can review this information and use it to prioritize, make changes, and build alignment in professional development, processes and policies, technology, and resources to address ongoing needs for continuous improvement.

Users of this Guide may choose to download the full guide or individual sections for targeted distribution based on roles at the institution. The Guide will be particularly useful for:

- Cross-functional data and inquiry teams evaluating data from the Spring, Summer, and Fall terms. Each term presents different variables for analysis, including when in the term the institution switched to virtual operations, types and levels of supports in place, focus of professional development for faculty and staff, use of technology, and type/amount of data collected.
- Academic and student affairs teams charged with evolving models of instruction and support that align with emerging trends. Examining qualitative and quantitative data enables practitioners to distinguish between crisis-induced short-term changes and more permanent shifts that require the removal of additional systemic barriers, frictions, and inequities.
- Scenario planning for Fall term in areas like course demand and scheduling, resource prioritization and allocation, and risk assessment.
- Identifying additional questions to ask, data to collect, and actions to take in subsequent terms.

The guide is designed for use in whole or in part to help colleges make timely decisions. Your institution will likely have already collected some of the suggested data. A good way to start is to inventory the data you have and identify where there are gaps, not



only in data, but also in access. For example, ensure your Institutional Research team has access to the Learning Management System to support the analysis of that rich data source. Focus on the data that helps you answer the most pressing and strategic questions at hand.

Achieving the Dream coaches are prepared to help institutions use this guide to focus on key questions, advance ongoing student success work, and maintain momentum in areas like equity and capacity building.

The guide is a living document that will be updated as learning from the Spring and Summer terms is documented, more information is available about the state of the higher education environment, and institutions provide feedback on their use of the included processes and metrics.

## Leading and Lagging Indicators

Leading indicators track progress on the attainment of a lagging indicator. They are called leading indicators because achievement of them predicts success of longer-term lagging indicators like completion, transfer, and employment.



For several years, ATD institutions have focused on research-based Early Momentum Metric leading indicators. These include credit momentum in the first term and first year, gateway course momentum, and persistence momentum. Research from the Community College Research Center provides evidence that these measures are predictive of higher retention and completion rates.

The COVID-19 crisis highlighted additional, even-earlier momentum metrics that institutions can monitor and act on to support student learning, student supports, and enrollment management decisions. This Guide identifies these additional metrics and provides the context in which they can be used to inform decision-making in the context of COVID-19 or any crisis that results in rapid change and uncertainty.

For example, student success in a remote-delivery course may be influenced by the following leading indicators: high school grade point average, reliable broadband and technology access, Learning Management System engagement in course materials and discussion boards, participation in remote student supports like advising and tutoring, connection to emergency aid and basic needs resources, and flexibility in completing course requirements. For performance-based courses in Career and Technical Education there may be additional leading indicators such as completion of performance-based learning objectives.



Course success rates are leading indicators for other measures like credit accumulation, success in subsequent courses, and persistence. For Career and Technical Education programs there may be additional leading indicators for completion like passing a licensure exam.

There may be other measures that are leading indicators of student success at your institution. To determine what they are, ask two questions: (1) is it predictive of achieving a goal? (2) can it be influenced? If the answer to both questions is yes, then the metric is likely a leading indicator.

The next section of this Guide identifies key questions decision makers in academic, student, and administrative services should be asking themselves about the impact of virtual strategies on student success, and it provides a snapshot of metrics that can be used for decision-making and action.



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## Metrics at a Glance

	<b>Participation</b>	<b>Performance</b>
<b>Student Learning</b>	Learning Management System Engagement Attendance Alerts Connectivity/Computer Access Professional Development Offerings Professional Development Participation	Credit Accumulation Grades Faculty Narratives Student Satisfaction Student Narratives Professional Development Evaluations Retention
<b>Student Support Services</b>	Participation in Services Duration of Services FAFSA Completion Communications (Include modality) Contacts per students Services provided (Academic, Advising, and Emergency Aid) Transfer Applications	Completions Transfer Program Completions Student Satisfaction Relationships between Services and Grades Faculty Narratives Student Narratives Support Staff Narratives
<b>Enrollment Management</b>	Course enrollment Withdrawals Pre-registrations	Yields Retention Summer melt
	<b>Key Student Characteristics:</b>	<b>Key Instructional Characteristics:</b>
	Enrollment Status Attendance Intensity Credential-seeking Status Program of Study Economic Status Race/Ethnicity Age Gender First-generation Status	Course Course Type Course Section Course Modality Grade Distributions Program Faculty Status (FT/PT) Faculty Experience with multiple modalities Support Modality

## Thinking about Methods for Inquiry and Data Collection

In times of disruption, many decisions need to be made quickly. Quantitative data is typically the easiest to access quickly. The most value will be found in focusing questions and analysis on what happened since the transition to remote learning, why (weaving in the qualitative lens), and then using that information for continuous improvement and to inform future decisions. Predictive models rely on past trends and when those patterns are disrupted, are less reliable. Expect to spend more time on descriptive and diagnostic analytics for rapid decision making.

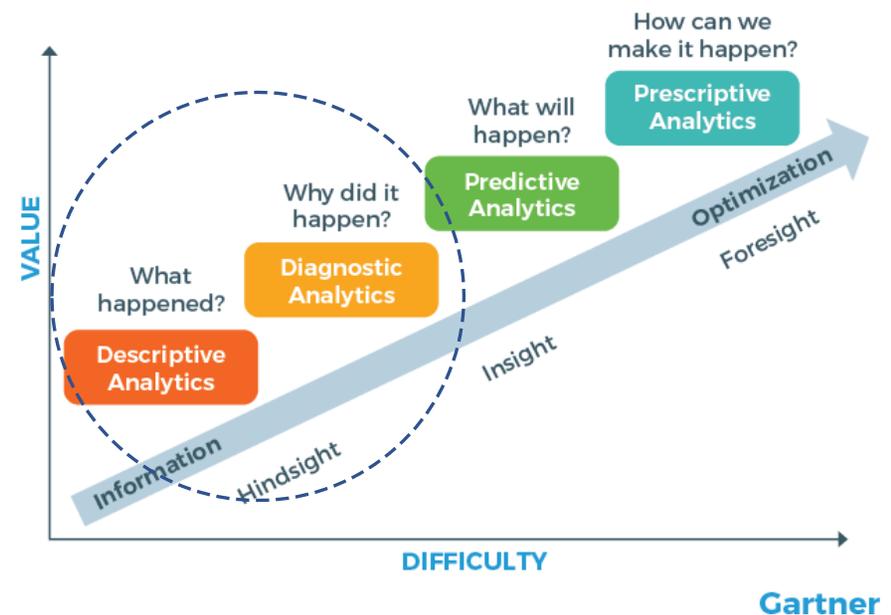
Qualitative, diagnostic data is also useful in understanding why different outcomes exist or what is required to change them to remove systemic barriers, friction, and inequities. Many colleges are surveying students, faculty and staff to understand better the impact of the transition to remote learning. Some colleges are using technology to facilitate focus groups while the experiences of Spring term are still fresh in people's minds.

There are several evidence-based processes for effective joint inquiry about the impact of Spring strategies and interventions, including:

- Exploratory mode: What do we know about what happened? What do we not know but wish we did? What are the implications for our current planning?
- Test: What critical questions or hypotheses can't be answered by existing information and need to be tested?
- Pre-mortem examination: What could cause this strategy or intervention to fail? What changes should we make to avoid unfortunate results?

Once there is an understanding of why certain outcomes are occurring, college teams can move to predicting what outcomes will be when other strategies are implemented.

### Analytic Value Escalator



## Student Learning

### Impact on Student Success

**Question:** *What was the impact of remote learning on student course success progression in the Spring 2020?*

**Audience:** Faculty, instructional administration, instructional designers, professional development staff, student affairs administration, college leadership

#### **Guiding Questions:**

1. Were there differences in grades and completion rates between courses, sections within courses, and/or student groups? For CTE, were there differences between programs?
2. Why do these differences exist? Were some faculty more experienced teaching remotely? Were there variations in the support different departments provided their faculty? Did some faculty have easier access to support from Center for Teaching and Learning or the instructional designers?

#### **Data to Consider:**

- Number of credits attempted that were completed with A-C grades or pass
- Number and percentage of A-C grades
- Number and percentage of WF grades
- Number and percentage of I grades
- Number and percentage of course withdrawals
- Percentage of I grades successfully completed
- Number and percentage of students who re-enrolled term-to-term and year-to-year
- Number and percentage of students with WF grades who re-enrolled in those courses in next term
- Faculty participation in professional development; Teaching & Learning events/resources

#### **Disaggregation:**

Program; Course & Section; Student characteristics; Faculty experience teaching remotely pre-COVID-19

#### **Method:**

Descriptive; Difference; Qualitative

#### **Data Source:**

Student Information System (course grades); Professional development records; Faculty surveys or focus groups

#### **Frequency and Timing:**

End of each term

#### **Actions:**

- ✓ Determine which courses/sections had the greatest success to understand which high impact practices were implemented that can be used to support ongoing improvement in instructional design, professional development, and faculty peer mentoring/coaching
- ✓ Incorporate in advising protocols and advisor professional development to inform course combination recommendations, especially for part-time students

**Guiding Questions:**

3. Did remote learning have a positive or negative impact on course success?
4. Why? Were some faculty more experienced teaching remotely? Were there variations in the support different departments provided their faculty? Did some faculty have easier access to support from Center for Teaching and Learning or the instructional designers?

**Data to Consider:**

- Number and percentage of W or F grades in all courses
- Number and percentage of A-C grades in all courses
- Number of I grades (Incomplete)
- Percentage of I grades successfully completed
- Number and percentage of withdrawals
- Student narratives
- Faculty narratives

**Disaggregation:**

This term compared to same term last year; Spring term compared to Summer term and Fall term 2020

**Method:**

Descriptive

**Data Source:**

Student Information System (course grades); Faculty surveys or focus groups; Student surveys or focus groups; Course evaluations

**Frequency and Timing:**

End of each term

**Actions:**

- ✓ Determine which courses/sections had the greatest success to understand which high impact practices were implemented that can be used to support ongoing improvement in instructional design, professional development, and peer mentoring/coaching
- ✓ Incorporate in advising protocols and advisor professional development to inform course combination recommendations, especially for part time students



**Guiding Questions:**

5. Were students satisfied with the instruction they received?

**Data to Consider:**

- Satisfaction scores
- Student narratives

**Disaggregation:**

Course; Technology used to access and complete course

**Method:**

Descriptive

**Data Source:**

Student surveys or focus groups;  
Course evaluations

**Frequency and Timing:**

End of each term

**Actions:**

- ✓ Determine which courses/sections had the greatest satisfaction to understand which high impact practices were implemented and which technologies utilized to support ongoing improvement in instructional design, professional development, and peer mentoring/coaching

**Guiding Questions:**

6. What students are attempting to transfer credit to a four-year colleges or universities?
7. What percent of transfer applications were accepted at four-year colleges or universities?
8. What percent of credits from Spring 2020 were accepted at four-year colleges or universities? What percent of Pass grades were accepted?
9. What percent of students delayed transfer due to emergency withdrawals or Incomplete grades that need to be resolved?

**Data to Consider:**

- Transfer applications
- Transfer program completions
- Spring term grades
- Transfer acceptance rates
- Acceptance of credits transferred
- Percentage of Pass grades that transferred
- Students on path to transfer who had an emergency withdrawal or incomplete grade
- Student aspirations/future plans

**Disaggregation:**

Program; Student subgroup; Four-year colleges and universities

**Method:**

Descriptive

**Data Source:**

Student Information System (degree audits); Transcript requests; Student surveys; National Student Clearinghouse

**Frequency and Timing:**

After Spring term when grades are posted, and university decisions are made.

**Actions:**

- ✓ Outreach to students who earned Incomplete grades to resolve
- ✓ Outreach to students who withdrew to re-enroll
- ✓ Advocacy outreach to college and university partners around transfer to accept Passing grades
- ✓ Increase transfer advising for all transfer students during the crisis
- ✓ Dedicate resources to advising students around reverse transfer

## Student Engagement

**Question:** *How engaged were students in remote learning?*

**Audience:** Faculty, instructional administration, instructional designers, professional development staff, marketing and communications, college leadership

**Guiding Questions:**

1. Are all students logging into the Learning Management System and submitting work?
2. Where was engagement highest and lowest?
3. Were there differences between courses and/or student groups?
4. What was the relationship between level of engagement and course success?
5. How many times per week do faculty think students need to log in/engage to be successful?
6. How are faculty using the various features and tools of the Learning Management System?

**Data to Consider:**

- Number and percentage of students who logged into the Learning Management System in 1st week
- Number and percentage of students with weekly Learning Management System engagement
- Number and percentage of students who did not log in for 4 or more consecutive days
- Engagement score (high, medium, low) based on engagement (number and length) with discussion boards, course materials, page views based on faculty input as to most appropriate engagement in their courses
- Attendance and assignment completion
- Faculty usage statistics of Learning Management tools
- Faculty narratives

**Disaggregation:**

Program; Course & Section; Student characteristics

**Method:**

Descriptive; Difference; Correlational; Qualitative

**Data Source:**

Learning Management System analytics; creation of high/medium/low engagement matrix based on faculty input; Faculty focus groups

**Frequency and Timing:**

Weekly while courses are in session; End of each term

**Actions:**

- ✓ Create profile of levels/types of engagement that lead to greater course success
- ✓ Determine which courses had the highest engagement to understand which high impact practices were implemented to support ongoing improvement in instructional design and professional development
- ✓ Determine which courses and instructors would benefit from additional academic and non-academic supports
- ✓ Determine which instructors would benefit from additional professional development and resources
- ✓ Determine which students would benefit from additional academic and non-academic supports

**Guiding Questions:**

7. What was the impact of alerts and/or interventions?
8. Did faculty use of alerts and interventions change during or after the transition to remote learning?

**Data to Consider:**

- Number of alert flags raised
- Number of alert flags closed
- Amount of student follow-through (tutoring and other academic supports; non-academic supports)
- Withdrawal rates
- Course grades

**Disaggregation:**

Course & Section; Student characteristics; Faculty use of alerts and interventions; Pre- and post-COVID-19 transition

**Method:**

Descriptive

**Data Source:**

Student Information System (course grades); Learning Management System; Alert System reports; Tutoring/lab/learning resources usage reports; End of term course grades

**Frequency and Timing**

Weekly for alerts; End of term for courses grades

**Actions:**

- ✓ Create profile of levels/types of interventions that lead to greater course success
- ✓ Determine which intervention strategies and messages had the greatest impact
- ✓ Determine which students participated in follow through and the impact if had on course completion and grades
- ✓ Incorporate findings into faculty professional development
- ✓ Incorporate findings into advising protocols and professional development

**Guiding Questions:**

9. When are students most engaged with the Learning Management System?

**Data to Consider:**

- Peak viewing times

**Disaggregation:**

Course & Section; Student characteristics

**Method:**

Descriptive

**Data Source:**

Learning Management System log in records

**Frequency and Timing:**

Weekly while courses are in session; End of each term

**Actions:**

- ✓ Determine when to schedule future synchronous learning activities
- ✓ Send targeted outreach and communications during usage times

## Faculty Development

**Question:** *What faculty preparation was offered for the transition to remote learning?*

**Audience:** Faculty, instructional administration, professional development staff, college leadership

### **Guiding Questions:**

1. What type of professional development was offered?
2. To whom was the professional development offered/required?
3. What ongoing supports were available as faculty moved through each week of remote instruction?
4. What professional development was most effective?
5. What additional supports were available for faculty (mentors, buddies)?

### **Data to Consider:**

- Inventory of professional development content/session titles and dates offered
- Log in or attendance in professional development
- Evaluation assessments of professional development
- Course success for faculty completing professional development
- Faculty satisfaction with professional development

### **Disaggregation:**

Faculty experience with remote learning (pre-COVID-19); additional supports; academic program/discipline

### **Method:**

Descriptive; Difference

### **Data Source:**

Human Resources; Center for Teaching & Learning records; Professional development evaluations; End of term course grades

### **Frequency and Timing:**

Each term

### **Actions:**

- ✓ Determine extent to which professional development prepared faculty to teach effectively, which methods were most effective, what additional professional development is required for teaching and learning excellence in remote environment and deliver it
- ✓ Determine what additional supports are needed and make them available at scale
- ✓ Assess relevance and applicability of professional development content for ongoing improvement



## Student Support Services

### Engagement with Academic Supports

**Question:** *To what extent and in what ways did students participate in academic support services?*

**Audience:** Faculty and instructional administration, tutoring, learning resources and other instructional support personnel, student affairs staff and administration

**Guiding Questions:**

1. What academic support services were available remotely and to what extent?

**Data to Consider:**

- List of academic support services available and days/hours of availability
- Sign-in or log-in records for all academic support services

**Disaggregation:**

Program; Course

**Method:**

Descriptive

**Data Source:**

Tutoring/lab/learning resources  
computer tracking reports; Sign-in  
logs/Swipes

**Frequency and Timing:**

Weekly during term

**Actions:**

- ✓ Determine adequacy of availability and ramp up/down where appropriate
- ✓ Determine which courses/programs had highest usage
- ✓ Focus student communications, messaging content and frequency

**Guiding Questions:**

2. What was the level of participation in each support service?
3. Where were there differences in the level of usage of academic support services?
4. Where were there differences in participation by courses and/or student groups?

**Data to Consider:**

- Level of usage by academic support service
- Impact on course completion/grade
- Faculty, Learning support, and student narratives
- Effectiveness scores

**Disaggregation:**

Course & Section; Student characteristics

**Method:**

Descriptive; Difference; Qualitative

**Data Source:**

Student Information System (course grades); Tutoring/lab/learning resources computer tracking reports; Sign-in logs/Swipes; Student surveys or focus groups; Faculty & Learning support staff surveys or focus groups; Chatbox usage/question; Social media mining

**Frequency and Timing:**

End of term

**Actions:**

- ✓ Ramp up or decrease service levels
- ✓ Formulate effective communications to students with data, including examples of course success with usage

**Guiding Questions:**

5. What was the relationship between use of academic supports and course performance?

**Data to Consider:**

- Academic supports usage
- Grade distribution

**Disaggregation:**

Program; Course; Usage level (high, med, low) of academic supports

**Method:**

Correlational

**Data Source:**

Student Information System (course grades); Tutoring /lab/learning resources computer tracking reports; Sign-in logs/Swipes; End of term grade distribution

**Frequency and Timing:**

End of term

**Actions:**

- ✓ Determine minimum usage that facilitates success
- ✓ Determine levels that correlates with improved success
- ✓ Formulate effective evidence-based communications to students

## Engagement with Non-Academic Supports

**Question:** How effective was remote advising?

**Audience:** Students affairs staff and administration, professional development staff, faculty and instructional administration where faculty providing advising support, college leadership

### **Guiding Questions:**

1. How was remote advising messaged?  
Did different student groups receive different messages?
2. How many students participated in remote advising?
3. Were there different levels of participation by student group or messaging segmentation?
4. What was the frequency and average length of a remote advising session?
5. How was advising delivered?

### **Data to Consider:**

- Number of students and number of contacts made per student
- Total time for remote advising, average time per student and distribution of time
- Communications delivered to students
- Logs or records of advising content

### **Disaggregation:**

Delivery mode; Student characteristic; Program

### **Method:**

Descriptive; Difference

### **Data Source:**

Student Information System (course grades); Advising computer tracking reports; Sign-in logs/Swipes; Inventory of how delivered (email, chat, Zoom, phone, other)

### **Frequency and Timing:**

Weekly during term; End of term

### **Actions:**

- ✓ Determine whether advising usage was greater, same or lower than in past (overall and on average per student)
- ✓ Determine which students utilized services and which did not
- ✓ Determine whether advising content same or different
- ✓ Determine most effective communications and replicate
- ✓ Redesign advising processes and supports based on findings

## Orientation and Onboarding of New Students

**Question:** *How effective is orientation and onboarding of new students for Summer and Fall?*

**Audience:** Student affairs staff and administration, financial aid and registrar's office, professional development staff, college leadership

### **Guiding Questions:**

1. What was participation compared to previous Summer and Fall terms?
2. How satisfied were students compared to previous terms?

### **Data to Consider:**

- Description of delivery design
- Participation levels (log-ins or rosters)
- Number of courses enrolled per student
- Student satisfaction
- Student narratives
- FAFSA completion

### **Disaggregation:**

Full- and part-time; Transfer; Transient

### **Method:**

Descriptive; Difference; Qualitative

### **Data Source:**

Student surveys; Attendance records; Financial Aid and Registrar's Office data; Enrollment data for comparison purposes

### **Frequency and Timing:**

At completion of orientation

### **Actions:**

- ✓ Assess effectiveness of remote processes
- ✓ Redesign to improve effectiveness

## Student Basic Needs

**Question:** *To what extent were student basic needs addressed?*

**Audience:** Student affairs staff and administration, professional development staff, college leadership.

### **Guiding Questions:**

1. Has there been an increase in requests for emergency aid?
2. How were students matched to resources?
3. How will CARES Act Relief funds be used?

### **Data to Consider:**

- Inquiries from call centers, chat, email, and other sources by type of request
- Communication/outreach to students
- Description of services and projected usage
- Student narratives

### **Disaggregation:**

Recorded student need; Type of service provided/referrals

### **Method:**

Descriptive

### **Data Source:**

Survey results; Attendance records; Call logs

### **Frequency and Timing:**

Point of service, ongoing

### **Actions:**

- ✓ Identify where needs appear to be met and where additional support is required
- ✓ Measure effectiveness of outreach strategies and replicate successful ones

## Remote Support Satisfaction

*Question: Were students satisfied with the types and availability of remote non-academic supports?*

**Audience:** Student affairs staff and administration, professional development staff, college leadership

**Guiding Questions:**

1. Which non-academic supports had highest level of satisfaction?
2. To what level did students participate in these valuable supports?
3. Are there additional process barriers that need to be removed to make the delivery of remote supports more effective?

**Data to Consider:**

- Student satisfaction ratings
- Advisor and Student Affairs staff narratives

**Disaggregation:**

Non-academic support type

**Method:**

Descriptive; Qualitative

**Data Source:**

Student support staff surveys;  
Focus groups; Participation levels

**Frequency and Timing:**

Point of service, ongoing

**Actions:**

- ✓ Redesign remote service content, availability, responsiveness, and messaging based on findings

## Enrollment Management

### Retaining Current Students

**Question:** *How were students encouraged to re-enroll in the Summer, Fall and subsequent terms?*

**Audience:** Student affairs staff and administration, faculty and instructional administration; professional development staff, college leadership

#### **Guiding Questions:**

1. What communications/outreach strategies were most effective in driving re-enrollment?
2. What other strategies were effective (BOGO, free classes in summer, etc.)?
3. What changes in enrollment patterns occurred (early enrollment, waiting to last minute, etc.)?
4. Who re-enrolled?
5. Did students without access to technology or internet return at the same or different rates than other students?
6. Impact for course scheduling?

#### **Data to Consider:**

- Yields for each strategy
- Point in time registrations compared to same point in time with last Summer or Fall term
- Credits and courses enrolled
- Technology access

#### **Disaggregation:**

Student characteristics; Program; Completion quartile (25% credits completed; 50% credits completed; 75% credits completed); Access to technology/internet; Full-time; Part time

#### **Method:**

Descriptive; Difference

#### **Data Source:**

Student Information System (registrations); Registrar data; Technology access surveys

#### **Frequency and Timing:**

Daily during pre- and regular registration; Census date

#### **Actions:**

- ✓ Determine demand for high enrollment courses and courses required to complete programs
- ✓ Based on patterns and trends, adjust staffing for peak periods to ensure students get enrolled with courses they need
- ✓ Determine most effective strategies and incorporate for Spring registration
- ✓ Incorporate findings into Spring course scheduling

## Attracting New Students

**Question:** *How were students encouraged to enroll in the Summer, Fall and subsequent terms?*

**Audience:** Student affairs staff and administration, faculty and instructional administration, professional development staff, college leadership

### **Guiding Questions:**

1. What communications/outreach strategies were most effective in driving new enrollment?
2. What other strategies were effective (BOGO, free classes in summer, etc.)
3. What changes in enrollment patterns occurred (early enrollment, waiting to last minute, etc.)?
4. Who enrolled?
5. Impact for course scheduling?
6. What were the yields from admissions to orientation to enrollment?
7. Were there differences between student groups?

### **Data to Consider:**

- Yields for each strategy
- Point in time registrations compared to same point in time with last Summer or Fall term
- Credits and courses enrolled

### **Disaggregation:**

Student characteristic; Direct from high school; Dual enrollment; Transfer; Transient; Adults

### **Method:**

Descriptive; Difference

### **Data Source:**

Student Information System (registrations); Registrar data

### **Frequency and Timing:**

Pre-enrollment; Census date

### **Actions:**

- ✓ Determine demand for high enrollment courses, especially General Education
- ✓ Based on patterns and trends, adjust staffing for peak periods to ensure students get enrolled with courses they need
- ✓ Determine most effective strategies and incorporate for Spring registration, as appropriate
- ✓ Incorporate findings into Spring course scheduling
- ✓ Improve recruiting and admission processes

## Prioritizing Course Offerings

**Questions:** *What are the most essential course offerings for Fall?*

**Audience:** Faculty and Instructional administration, student affairs staff and administration, registrar, professional development staff, college leadership

**Guiding Questions:**

1. Given multiple scenarios for new and returning student enrollment, what courses are likely to have greatest demand?
2. How will that impact course schedule?
3. How will be students in performance-based Career and Technical Education classes complete their course learning objectives and industry certifications?

**Data to Consider:**

- Analysis of current term and trend grades by course
- Analysis of students' course needs by program
- Analysis of demand for General Education Courses
- Number of students needing labs and clinicals
- Delivery options
- Anticipated changes in schedule

**Disaggregation:**

Program; Course; Day of week and time of day

**Method:**

Descriptive

**Data Source:**

Student Information System (course grades); Registrar data; Trend data on grades; Enrollment data; Course scheduling software; Space utilization.

**Frequency and Timing:**

End of term

**Actions:**

- ✓ Develop course schedule to meet anticipated student needs
- ✓ Determine professional development needs of faculty
- ✓ Adjust advising protocols if required

## Standing up Short-Term Programs

**Question:** *Are there opportunities to add/redesign/repackage courses, credentials, and short-term programs to attract more students for Fall term?*

**Audience:** Faculty and instructional administration, registrar, financial aid, Student affairs staff and administration, college leadership

### **Guiding Questions:**

1. How do the current short-term programs and non-credit courses match current demand in local/regional labor market?
2. Can any of the current short-term programs be adapted quickly to better meet labor market demand?
3. Are there other short-term programs or non-credit courses that can be offered to meet labor market demand?

### **Data to Consider:**

- Labor market needs by programmatic area
- Unemployment data
- Stackable certificates
- Non-credit courses

### **Disaggregation:**

Job type; State; County; Five-year trend and projections

### **Method:**

Descriptive

### **Data Source:**

Review of stackable certificates; Review of non-credit courses; State Department of Labor; Workforce software (Burning Glass, JobsEQ, EMSI, etc.); Opportunity Insights Economic Tracker; Local newspapers; Local employment security commissions; United Way ALICE® Report

### **Frequency and Timing:**

Prior to enrollment period

### **Actions:**

- ✓ Reconfigure/redesign/adapt current short-term programs, certificates, and non-credit courses to meet demand
- ✓ Secure instructional resources and schedule courses
- ✓ Adapt advising protocols and provide additional professional development for advisors
- ✓ Develop and implement communication/outreach strategies



## Scenario Planning for Action

College teams can use the information collected, analyzed, and discussed in the prior section of this Guide to identify policy and process changes and resource re-allocations (professional development, technology, staffing/job requirements) required to evolve and improve the strategies put in place when the institution transitioned to remote learning and operations in spring 2020.

The template on the following page will facilitate the identification of these actions, highlight the level of investment (time, money, people) required, and support decision-makers to consider scenario planning for fall term in areas like course demand and scheduling, resource prioritization and allocation, and risk assessment. Plan on filling in multiple versions of this template to reflect your best-case, moderate-case, and worst-case scenarios.

## Strategic Scenario Planning Tool

Plan on filling in multiple versions of this template to reflect your best-case, moderate-case, and worst-case scenarios.

Area of Inquiry	Process Design	Policy	Professional Development	Technology	Resources
	<i>What processes need to be redesigned or implemented based on what we've learned?</i>	<i>What policies or procedures need to be changed or adopted based on what we've learned?</i>	<i>What professional development is needed for ongoing improvements in outcomes and for whom?</i>	<i>What technology do we have/need to streamline and improve processes and measure the impact of interventions and changes?</i>	<i>What additional or reallocated resources are required to support ongoing improvements?</i>
<b>Student Learning</b>					
<b>Student Supports</b>					
<b>Enrollment Management</b>					
<b>Other</b>					

## Appendix A – Notes on Quantitative Methods and Analysis

There are four types of quantitative data analyses from basic or descriptive, difference, correlational, to predictive with variations of increasing complexity. The most basic type of data analysis and commonly utilized set of statistics is descriptive.



### Descriptive

Descriptive data are summary data that fall into three categories frequency counts (data visual display, percentages, crosstabs), central tendency (mean, median, mode) and variability (range of values and standard deviation.) Descriptive data are often shown in data displays. The more common types include frequency distributions, graphs, frequency histograms, bar graphs, and pie charts. The advantages to using descriptive data is that they are easy to calculate and can yield brief, easily interpreted reports.

### Difference

Before conducting difference tests, the type of data included in the analysis and the number of groups involved determine the technique employed. Difference data can serve two functions. The first function is to test for differences between two or more groups when all data for the groups are available such as cross-tabs, t-tests, and ANOVA. This is a descriptive function. There are also statistical inferential functions, but data underlying these difference tests should meet the assumptions of normality, equality of variance between groups, adequate sample size, and random assignment. Since assessments need to be research based, according to accrediting standards, meeting the assumptions of conducting statistical tests is preferred but often not practical in educational environments.

Difference tests in educational assessments can serve several purposes and planning the assessments with the end in mind is wise. For example, if the researcher plans to measure the difference between test scores in a pre/post-test design, ensuring that the participants are paired in the analyses is required. The pairing design considers the likelihood that pre/post scores for the same

participant are related to each other. Therefore, the difference test compares and measures the impact in scores between pairs. However, if the groups are independent of each other, and the metric is test scores, the difference test used is either an independent sample t-tests for two groups or an ANOVA which is used for two or more groups. Difference tests can also be utilized for measuring the difference in a metric in one sample, consisting of no groups but comparing the average metric to an expected or theoretically determined value.

Since, the 2000s a matched group design has been widely used to create matched grouped pairs on a single-score known as a propensity score and a technique known as propensity score matching. After matching, students are compared utilizing the difference tests discussed earlier. The technique has become popular because it can be used to simulate random assignments of students into two groups or a quasi-experimental design. It is worth noting that propensity score matching is one of the more complex difference techniques and requires larger n's and more time to complete.

## **Correlational**

When two or more data fields are available, and no group analyses are desired, correlational designs are utilized for purposes of assessment. The primary correlate statistic tests the relationship between two or more data fields. Researchers use correlational designs when building prediction models. Data fields that are highly correlated to each other are often predictive. It is important to note that correlation does not imply causation and extreme low or high scores greatly affect results.

The most widely used correlate test is the Pearson correlation or Pearson  $r$ , which is a bivariate analysis (that is between two data fields) using scale, ratings (1-5 or more) or a combination of the two data types. Spearman's rank order is used with two ordinal or ranked fields, if you are not treating ranks as scales.

Correlations have three main properties that are important to understand: direction, form, and degree or strength of the relationship. Direction indicates whether the relationship is positive (values in both fields move up or down in the same direction and at a constant rate). The relationship can be negative, meaning as one value goes up the other value goes down and vice-versa. The form of the relationship is either linear, shown as a straight line or curvilinear (values start high or low, then peak or dip, and return to high or low). Degree or strength indicates how closely related the variables are, especially when mapped on a straight line. This is expressed as a correlation coefficient and can fall between -1.00 and +1.00. The farther from 0, the more closely the fields are related. As a general guide, 0.00 = no correlation,  $\pm .10$  = weak correlation,  $\pm .30$  = moderate correlations,  $\pm .60$  = strong correlation, and  $\pm 1.00$  = perfect correlation. Using these correlation statistics as indicators of relationships between two or more fields are often displayed in reports with up or down arrows to indicate the direction of the relationship. Bi-variate correlations form



the building blocks of predictive models and correlations are often explored and identified during the initial stages of predictive modeling.

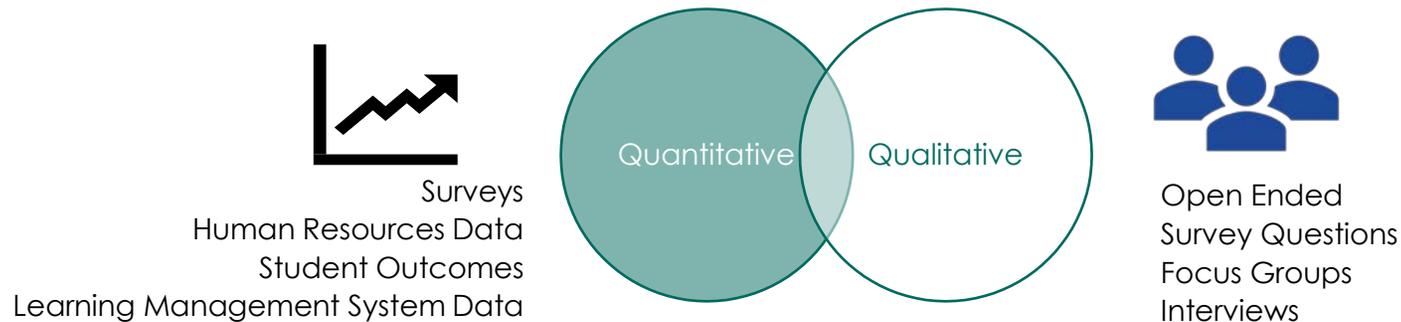
## **Predictive**

Predictive statistics are less frequently used in assessments because they require the most expertise and effort. The most common predict statistic utilized in educational research is regression. Staging regression datasets can be difficult and time consuming. Additionally, analyses involve many fields, data types, and require meeting assumptions for statistical analyses for each field and combinations of fields. Further, reporting the results effectively requires a good understanding of regression statistics and the ability to translate information for a variety of audiences.

Nonetheless, incorporating predictive statistics into assessment activities can enhance the analysis and inform long-term strategic plans focused on student success efforts. Building on correlational models is a useful approach to integrating predictive statistical models into assessment. One regression approach, known as logistical regression, predicts the likelihood of membership in one group or another, or a binary outcome. Common examples of this type of analysis include success or non-success in completing a credential, success or non-success in course completions, or continuous outcomes that are categorized as binary. Grade point averages often treated as continuous outcomes such as 0-1.99 treated as one possibility and 2.00 or higher treated as another possibility, are examples of continuous fields treated as binary outcomes. Logistic regression uses one or more fields to predict the probability of the binary outcome. Multiple regression models are utilized to predict a continuous outcome in contrast to logistic regression and can be powerful in building combinations of fields that are correlated to a continuous outcome.

## Appendix B – Notes on Qualitative Methods and Analysis

Some research questions will require qualitative data to better understand why or how current disruptions have affected students. Collecting qualitative data will most likely be done using surveys, focus groups, or interviews.



### Surveys

Surveys generally include both quantitative and qualitative data. Likert scales and multiple-choice questions will provide quantitative data that can be analyzed quickly to provide descriptive analysis and may also be part of any correlations or difference analyses that are done. Open-ended questions provide qualitative data. Surveys are easy to administer virtually, though response rates are always a challenge. The data is already in text form making it easy to analyze.

### Focus Groups or Group Interviews

Focus groups can be conducted virtually using a video conferencing platform. Focus groups take more planning and management than individual interviews, however they collect more data in a shorter amount of time. Focus groups also allow participants to react to each other's narratives creating rich data. Group interviews have less interaction between participants, but can be more efficient



than individual interviews. The research questions should guide whether individual (group interview) or group narratives (focus groups) are the right data collection method. Focus groups will need to be transcribed before they can be analyzed.

### **Interviews**

Interviews can be conducted virtually with video call platforms or by phone. Multiple interviews will be needed to provide adequate data for analysis and may take more time than focus groups. The advantage is participants may feel more comfortable sharing challenges. The research questions should guide the interview design and number of interviews conducted. Interviews will need to be transcribed before they can be analyzed.

### **Qualitative Analysis**

Like predictive analysis with quantitative data, qualitative data takes time and is most useful for complex questions where data is not needed immediately. Qualitative data generally answer why and how questions. To analyze these data, the data needs to be transcribed and then coded. Codes should reflect both the research questions and what is in the data to reveal both expected and unexpected outcomes and processes. Ideally these analyze will be conducted by at least two researchers. For the most complex questions, mixed methods research is appropriate, which would entail triangulating qualitative findings with the outcomes from all levels of quantitative methods.