USING DATA AND EVIDENCE TO LEAD HOLISTIC Advising Redesign:

A Guidebook for Campus Leaders for Promoting Consistent, Coherent, and Collaborative Data Use in Advising

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ABOUT THE Advising success network

Formed in 2018, the Advising Success Network (ASN) is a dynamic network of five organizations partnering to engage institutions in holistic advising redesign to advance success for Black, Latinx, Indigenous, Asian, and Pacific Islander students and students from low-income backgrounds. The network develops services and resources to guide institutions in implementing evidence-based advising practices to advance a more equitable student experience to achieve our vision of a higher education landscape that has eliminated race and income as predictors of student success. The ASN is coordinated by NASPA—Student Affairs Administrators in Higher Education, and includes Achieving the Dream, the American Association of State Colleges and Universities, EDUCAUSE, NACADA: The Global Community for Academic Advising, and the National Resource Center for The First-Year Experience and Students in Transition.

ABOUT THE PUBLISHER

The National Resource Center for The First-Year Experience and Students in Transition was born out of the success of the University of South Carolina's much-honored University 101 course and a series of annual conferences focused on the first-year experience. The momentum created by the educators attending these early conferences paved the way for the development of the National Resource Center, which was established at the University of South Carolina in 1986. As the National Resource Center broadened its focus to include other significant student transitions in higher education, it underwent several name changes, adopting the National Resource Center for The First-Year Experience and Students in Transition in 1998.

Today, the Center collaborates with its institutional partner, University 101 Programs, in pursuit of its mission to advance and support efforts to improve student learning and transitions into and through higher education. We achieve this mission by providing opportunities for the exchange of practical and scholarly information as well as the discussion of trends and issues in our field through convening conferences and other professional development events such as institutes, workshops, and online learning opportunities; publishing scholarly practice books, research reports, a peer-reviewed journal, electronic newsletters, and guides; generating, supporting, and disseminating research and scholarship; hosting visiting scholars; and maintaining several online channels for resource sharing and communication, including a dynamic website, email list, and social media outlets.

The National Resource Center serves as the trusted expert, internationally recognized leader, and clearinghouse for scholarship, policy, and best practice for all postsecondary student transitions.

INTRODUCTION

The Advising Success Network and its five core partners have focused on creating and distributing thought leadership and assets to promote holistic advising redesign in higher education. This guidebook was created to serve as a resource for data use by campus leaders, including mid- to senior-level administrators responsible for institutional advising initiatives. The National Resource Center for The First-Year Experience and Students in Transition – working on behalf of the Advising Success Network – aimed to identify strategies and data-use practices for data-driven decision making in advising services and collaboration of data use among campus stakeholders, meaning anyone whose role and/or actions shape and affect the planning for, delivery of, and decision making around advising at any stage.

About the Guidebook

This guidebook draws upon in-depth interviews with administrators who have oversight of academic advising at 18 institutions to provide strategies and examples of what campus leaders have been doing to promote consistent, coherent, and collaborative data use in advising.

Objective of the Guidebook

Our goal is to promote data use among campus leaders to improve advising and bolster student success through equity-minded approaches. This guidebook synthesizes and identifies best practices for improving collaboration and communication of data use among campus leaders and stakeholders in advising. Moreover, it presents strategies and practices used by institutions that can inform campus leaders seeking solutions for building a data culture toward developing holistic advising, with the goal of achieving greater and more equitable student learning and success in higher education.

Throughout the guidebook, we also provide recommendations for campus leaders to improve their equity and inclusion mindedness when developing coherent data-use strategies and culture. Most interviewees acknowledged that they prioritized equitable outcomes when examining data and identifying gaps in academic advising. For example, many mentioned they always disaggregated data by demographic information, such as socioeconomic status, race, ethnicity, and financial aid. The disaggregation of data is one step in the process to achieve equitable student outcomes. To promote equity, institutional data users and decision makers (e.g., mid- to senior-level administrators, advising directors, frontline advisors) must use the disaggregated data to inform their decisions and actions related to student success. Therefore, an equity-minded practice requires institutions to take responsibility and action for student success.

We begin this guidebook by emphasizing that an equity-oriented framework should be used as a guiding lens for advising redesign efforts. We contend that institutions should invest greater effort to address equity gaps through advising initiatives. We also recognize that many institutions strive to create an empowering culture and implement inclusive and culturally relevant practices in academic advising. For example, positions may emphasize equity and inclusion initiatives, or the diversity of service staff may increase through the hiring of advisors who come from culturally and linguistically diverse groups. However, institutions must move beyond merely focusing on diversity and inclusion efforts toward cultivating an equity-oriented data-use culture. This attention requires institutional staff to identify and develop clear advising objectives designed to reduce inequitable outcomes for racially and socioeconomically minoritized student populations (including Black, Latinx, Indigenous, Asian and Pacific Islander, first-generation, and low-income students) and to determine the role of advising in supporting retention and graduation among students.

Organization of the Guidebook

This guidebook begins by exploring some **common challenges affecting strategic data use**, which can be organized in three primary areas:

- 1. Systems: The variety of data and information systems poses a challenge to optimizing data infrastructures.
- 2. Culture: Different attitudes or perspectives in academic advising and data use among institution stakeholders may cause inconsistency and incoherence of data use.
- **3. Resources**: Shortages of professional personnel, professional development and training, and data analytic solutions result in limited capacity for data use.

This series of guidebooks addresses the challenges faced by institutions in using data strategically with academic advising and presents real-world approaches and strategies campus leaders can use to cultivate a collaborative and coherent approach to data use in advising:

- 1. Improving the use of systems designed to gather and interpret evidence on academic advising
 - Develop campus-wide assessment for academic advising
 - Develop and enhance data capacity
- 2. Creating a culture of data use around academic advising in your institution
 - Establish clear objectives to understand how data can inform the use of advising
 - Define the role of academic advising in institutional initiatives
- 3. Improving the human resources needed to use data more strategically
 - Identify stakeholders of advising
 - Improve collaboration and communication among advising stakeholders for better data use
 - Provide advising- and data-related professional development regularly to advising stakeholders

This volume of *Using Data and Evidence to Lead Holistic Advising Redesign* focuses on the first challenge, **Systems**, and provides evidence-based strategies focused on *improving the use of systems designed to gather and interpret evidence on academic advising*.

Using This Guidebook

This guidebook, along with the others in the series, was created with the following questions in mind:

- What should campus leaders and stakeholders in advising consider when using data and evidence to lead advising redesign?
- How can advising redesign promote equity at their respective institutions?

As a core partner of the Advising Success Network, The National Resource Center for The First-Year Experience and Students in Transition has identified strategies for institution leaders regarding better use of data to improve collaboration and consistency in advising practices across colleges, divisions, departments, and other institution units, such as institutional research, information technology, enrollment management, and student affairs.

This guidebook (a) describes the challenges campus leaders face when using data-driven and evidence-based approaches in decision making and (b) provides recommendations for using data and evidence strategically in an effort to create holistic advising redesign that promotes equitable student outcomes.

We drew upon interviews with administrators from 18 different campuses; each administrator had responsibility for advising at their institution.¹ The interviews gathered different opinions and approaches from a wide range of institutions with diverse structures, processes, and initiatives surrounding advising and thus explored major topics relevant to data- and evidence-based approaches in decision making. Emphasis is on how campus leaders use:

- Data in decision making and case making
- Evidence to collaborate across silos within organizations
- Data in their leadership (e.g., to collaborate with other units on campus, to foster a culture of using data)
- Assessment and evaluation strategies

This guidebook provides leaders with recommendations for using data and evidence strategically to improve student success. In addition to administrators and professionals in academic advising, we encourage campus leaders from academic affairs, student affairs, enrollment management, deans and associate deans from academic colleges, data analytics departments, information technology, and institutional research and effectiveness to use this guidebook to support holistic, equitable advising-related work on your campus.

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IMPROVING THE USE OF SYSTEMS DESIGNED TO GATHER AND INTERPRET EVIDENCE ON ACADEMIC ADVISING

There is a strong upside for using evidence in strategic decision making, as the presence and strength of data- and evidence-based approaches within institutions affect data use and inform leadership decisions (Wayman et al., 2006). With clear, detailed, and orderly data on academic advising processes and learning outcomes, institutions can provide focused, high-quality academic advising that improves student success, resistance, and persistence toward college completion (Nutt, 2017). As a result, an administrator who is data driven and intentionally strategic can have a substantial influence on student outcomes, institution growth, and advising success.

Systems continue to be developed to support the gathering, storage, and interpretation of evidence. Advising technology, big data, and data analytics fundamentally shape the delivery and the expectations for holistic advising and can help facilitate meaningful collaborative conversations around data use in academic advising. Steele (2018) called institution leaders' attention to the fact that "institutional and learning analytics should be embraced to intentionally synthesize the use of big data to assess current practices and propose new ways to improve student success" (p. 67). Big-data analytics includes "the discovery and communication of meaningful patterns in data, using various techniques and tools to quantify performance and ultimately to describe, predict, and improve it" (Pelletier, 2015, para. 5). Additionally, technology is important, as it enables institutions to collect and analyze detailed information about student performance and behaviors, creating a rich stream of data for institutions to conduct data mining to support student success (Pelletier, 2015).

CHALLENGES WITH DATA AND EVIDENCE SYSTEMS

With the proliferation and development of new data technologies to support advising and campus decision making comes complexity. The campus leaders we interviewed demonstrated their hope to build comprehensive data systems that could encompass all types of data relevant to academic advising work. Institutions often reported using various types of systems to track students' usage of advising programs, students' academic performance, advisors' advising actions, and other information.

Campus leaders also stated a desire to improve case management systems to enable stakeholders to extract data from different systems easily and to provide more customizable and intentional functions for advising work. Stakeholders can include anyone whose role and/or actions shape and affect the planning for, delivery of, and decision making around advising at any stage. Some institutions were in the process of optimizing their data infrastructures to improve the capacity of data use and improve the connection between different data platforms, dashboards, and displays:

Our systems don't tend to talk to each other. There are many different types of systems.
We're pulling from different areas to get the data. For efficiency purposes, I would say that's a challenge.

- Director of Advising, Mesa Community College

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OBJECTIVES FOR IMPROVING DATA AND EVIDENCE SYSTEMS

In the following sections of this guidebook, we present recommendations for improving the use of systems designed to gather and interpret evidence on academic advising. Based on our interviews with campus leaders coupled with perspectives from previous research, we pinpointed two objectives for campus leaders to consider when working to improve the use of data systems to support institutional change efforts around advising:

- 1. Develop campus-wide assessment for academic advising
- 2. Develop and enhance data capacity

Objective 1: Develop Campus–Wide Assessment for Academic Advising

Conducting assessment can help institutions understand students' experiences with advising. The results of assessment can inform the effectiveness and areas of needed improvement of advising practices and processes (Cox et al., 2017; Jonson et al., 2014). Assessment results can also guide directions for professional development in the advising community. Additionally, assessment can be used as evidence to apply for more funding for developing advising-related work (e.g., hiring or purchasing technology).

The methods of assessment can combine quantitative and qualitative inquiry, use direct and indirect measurements, and represent formative and summative methods (Robbins, 2011). Meanwhile, assessment does not have to be limited to student respondents; it should also consider advisors' behaviors, practices, and outcomes from their perspectives.

Developing campus-wide assessment is associated with a shared understanding of academic advising and institutional objectives of academic advising.

I definitely had my key performance metrics, not only for advising, but for student success to make sure we were aligning up to the institution. One of the critical pieces that I saw was that advisors were operationally doing a lot of things that we measured, but no one ever sat down to teach them what the measurements were for. So, what we did was, we have some series that we call advising forums where all advisors are brought together.

- Associate Vice Provost for Student Success, University of Texas at San Antonio

All of our units have been asked to come up with an advising strategic plan specific to their own colleges. Although we might have some consistent goals across the institution for advising, different people are performing differently in their colleges or departments. Figuring out [the various] ways of the assessment process gives us specific and intentional ways to examine the data. We'll set the metrics and examine the data. Once we have that information, success or lack of success, we feed that back into the information loop to make revisions and hopefully improve, always with the first priority "How do we make this? How do we help students be successful to the institution?"

- Associate Vice Provost for Student Success, Virginia Tech

Some colleges and universities might be slow to implement campus-wide assessment because of to the advising model present on campus. For example, institutions that heavily rely on a decentralized advising model might not have a standardized protocol to measure students' expectations or experiences in academic advising. Or, some institutions may encounter resistance to develop student evaluations for faculty advising. From our interviews, we identified two measurement approaches that serve as alternatives for campuses that need faster solutions associated with assessment:

- Participation in national surveys that include measurement and assessment of academic advising. Some institutions participated in the National Survey of Student Engagement (NSSE) and its associated Academic Advising Topical Module. Those institutions used NSSE results to better understand their overall student experiences and satisfaction toward academic advising and to compare their institutional data in a national context. A comparable tool that community college leaders may use is the Community College Survey of Student Engagement (CCSSE).
- *Collaboration with campus partners on program evaluation*. Campus partners might include academic advising as one component in their campus-wide surveys. Some campus leaders in our interviews shared that their partner offices included questions related to advising activities in their student surveys.

Assessment Audit

Review and respond to the following questions to reflect on how campus-wide assessment can be developed to enact change around advising.

What assessment efforts are currently in place at your institution?

Identify a campus-wide objective related to advising. In what ways do your advising objectives support and center Black, Latinx, Indigenous, Asian and Pacific Islander, first-generation, and low-income students?

What campus-wide assessment activities are related to your identified advising objective? How do your assessment efforts support and center Black, Latinx, Indigenous, Asian and Pacific Islander, first-generation, and low-income students?

How do you collaborate with campus partners in these assessment efforts?

What other information about your advising work at your institution would you like to know that you do not already know? How would you collect that information in your assessment efforts?

Are there assessment efforts related to advising that you would like to implement at your institution? If so, what are these?

What are some advising-related assessment efforts you anticipate will take place at your institution?

Objective 2: Develop and Enhance Data Capacity

Another important component of enhancing a culture of data use is investing in data infrastructures and data and information-technology (IT) personnel to enhance capacity, which can be affected by institutional data leadership, infrastructure, accessibility, and literacy (Gerzon & Guckenburg, 2015). Institutional data leadership involves the roles and responsibilities of campus leaders and stakeholders as well as the objectives for data use (see EDUCAUSE's [2022] guide *Understanding and Developing a Data-Informed Culture* for additional information; Monaghan, 2017; Starobin & Upah, 2014; Wayman et al., 2006). It also includes forming a shared understanding of how data use improves academic advising. Without data infrastructure to provide data collection, storage, management, and access, no stakeholder will be able to achieve meaningful data use. National survey data have indicated that the majority of institutions have contracted with commercial vendors who provide advising technologies and data solutions to assist in data collection, management, and analytics (Shaw et al., 2021). Meanwhile, institutions also have their own data and IT experts to maintain data systems and to develop in-house platforms for data use.

Data infrastructure involves everything the institution needs to collect, manage, and analyze data and includes on-premise or cloud data storage systems. It consists of hardware, software, managed services, servers, storage, and network input/output along with people, processes, policies, and various technology tools. In our interviews, some common advising technology vendors used by institutions were Blackboard Learn with Ultra, EAB Student Success Collaborative, Hobson's Starfish, CIVITAS, Ellucian Banner, PeopleSoft Campus Solutions, and Canvas. Data accessibility requires institutions to identify solutions for connecting data and information in multiple data systems and for providing easy access to stakeholders. Integrating data from different systems poses a challenge to many institutions, as no one system can include all data and evidence institutions might need. Advisingrelated units on campuses invest in and implement the technologies that best meet their needs. However, data about students may be located in separate systems, presenting challenges to obtaining a comprehensive picture of students' progress. To better pull relevant data together, the Assistant Vice Provost for Advising & Academic Services at the University of Cincinnati suggested that greater efforts are needed to enable stakeholders to find relevant data easily:

Our data is not integrated enough. We have to pull data from many different places and manually piece it together. That poses a lot of additional challenges ... There's data that lives in Canvas, the learning management system, and there's data that lives in PeopleSoft, the student information system, and the new data that lives in the student success management system. Little of that data interfaces with the data that's on the personnel system about who's supporting all of this. That's a big piece we've got to accomplish.

Partnerships and collaborations with institutional data and technology experts are important for developing tools to gather multiple data sources in one place. For example, an academic advising administrator at Arizona State University mentioned that he worked with technology staff to create analytics sites where the advising group can get more reports and student data, enabling frontline advisors to access the data and use the data easily rather than depending on advising administrators or Dean's Office.

Moreover, it is important for leaders to take account of stakeholders' voices when selecting, developing, and implementing data and technology systems. Frontline advisors are gatekeepers who collect data related to academic advising activities. Their user experiences with technology and data management systems can help identify areas that need to be improved, thus potentially enhancing the quality of academic advising. For example, a campus leader from California State University, Chico shared that their student service support staff used three different systems to record the advising notes, which meant staff used different systems that did not interface with each other to provide relevant knowledge and information about students they served. Therefore, leaders asked IT staff to map stakeholder needs, align these needs with available resources, and enable all advising notes to be recorded in one system, allowing for productivity and effective collaboration. Within one data system, advisors were better able to support students by fetching data and conducting analytics more easily and efficiently.

Additionally, for some institutions, investing in data and IT personnel for data management and use may be necessary to better aggregate multiple data in one place. Previous research suggested recruiting more professional IT and data analytic personnel can be useful for campus leaders seeking to establish and maintain a culture of data

and evidence use (Webber & Zheng, 2019). Several campus leaders we interviewed had at least one designated person who assisted with data management and analytics in either their division or their central advising office. Some campus leaders also stated their urgency to hire more data and IT personnel to assist in data management and use. As the Assistant Vice Provost for Advising & Academic Services at the University of Cincinnati shared, "The team that supports our advising tools and technologies have assessment and data capacity. But we have not provided them with enough personnel support and time to be able to spend a lot of time on that yet." When expanding the accessibility of different data, it is important to ensure that different departments or divisions agree on the use of data systems. Data security and confidentiality should be not overlooked when developing campus-wide data systems. As the Assistant Vice President for University Advisement at California State University, Chico shared:

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We have memorandums of understanding and project charters that establish our relationship with IRES/Information Technology, specifically, those who work with PeopleSoft (student information system), Salesforce (customer relationship management), and Blackboard (learning management system). So, every advisor can have some aspects of data accessible to them, which have been previously approved from a data governance standpoint.

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EQUITY AND THE USE OF Systems

It is necessary for institutional leaders (e.g., mid- to senior-level administrators, advising directors, frontline advisors) to take responsibility and action for student success. Such commitment requires the use of equity-minded approaches, including disaggregating data by student subgroups (e.g., race/ethnicity, socioeconomic status, and gender, among others), using culturally sensitive and inclusively worded surveys, and using student personas to amplify the voices of historically marginalized populations.

Additionally, an equity-oriented approach requires data users to challenge deficit thinking and assumptions based on student characteristics, affinities, and identities (e.g., race and ethnicity, socioeconomic status, intellectual differences, cultures, among others). This approach is unlike deficit thinking, which often points to students' identities and characteristics as reasons for disparities in educational outcomes rather than calling out the impacts of social and institutional systemic shortcomings on those students (Park, 2018).

TABLE 1 REFRAMING DEFICIT THINKING FOR EQUITY MINDEDNESS

	Deficit-oriented approaches	Equity-minded approaches	Reflection questions
Impact	Maintain and uphold ste- reotypes about class, race, and gender	Avoid preexisting assumptions to guide decisions or actions	 What assumptions and biases do you hold that may affect how you analyze and interpret data?
Data	Do not take account stu- dents' perceptions and experiences	Use data triangulation and seek multiple data sources	 What information are you drawing upon to understand students' experiences and advising? Relatedly, what data and evidence are you using to justify decisions or actions related to advising redesign?

Pause and Reflect

Consider and reflect on the following questions related to data and technology use at your institution. Then, complete the checklist activity, using an X or checkmark to indicate whether your institution engages in collaborative data and technology use.

What advising technologies and data systems does your institution use?

How do the various technology and data systems at your institution interface and interact with one another?

How do the various technology and data systems at your institution facilitate or impede collaboration with individuals across organizational lines?

CHECKLIST FOR DATA AND TECHNOLOGY USE

My institution uses a suite of advising and data tools from a commercial vendor.

- My institution uses and develops in-house platforms.
-] My institution has a mix of commercially available and in-house platforms.

My institution has designated full-time personnel who assist with data management and use.

My institution includes IT and data professionals in meetings about initiatives associated with the development, monitoring, and management of holistic advising redesign.

My institution has accessible IT and data personnel to provide timely service.

If your institution is missing items from this checklist, what actions can you take and what relationships and/or networks can you leverage to create or strengthen the creation and delivery of these initiatives?

SUMMING IT UP: PRINCIPLES In practice

Data systems can be powerful tools for working across complex organizational realities on campuses. This guidebook works to help institutional leaders consider key concepts to improve the use of systems to support evidence-informed change in advising. The objectives shared can help campus professionals with leadership responsibilities for advising see the use of data systems as a form of organizational learning leading to improvement rather than simply to meet external demands for compliance or accountability.

It is important to gather data and evidence and to engage in assessment and evaluation efforts because these behaviors will lead to continuous improvement. For instance, we learned through our interviews that at the University of Texas, San Antonio (UTSA), sharing data created a broader understanding of its importance in advising; according to one administrator, "[data] gets other campus stakeholders invested in what you're doing. And you can set up other types of collaboration." The UTSA advising team was able to form new relationships and cultivate a strong collaborative bond with their IT department, and when IT received grant funding, they brought in academic advising as a part of the grant. The creation of these strong collaborative networks not only has the potential to create greater buy-in among stakeholders, but, as administrators at Mesa Community College found, it can help stakeholders center students throughout the advising redesign process. Simply put, collaboration and assessment bring about innovation. When universities build and increase data capacity and regularly work to make sure all stakeholders involved understand and have access to data and evidence, a culture of data use is sustained.

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APPENDIX RESEARCH METHODS

Review of Literature

We reviewed current educational reports, literature, and research on leadership in data use, data-driven and datainformed decision making in educational settings, and cultures of data use. We also reviewed articles posted on the website of NACADA: The Global Community for Academic Advising. We used the information we learned through reviews to develop an interview protocol and to provide justification for the major themes we identified.

Interviews

We recruited campus leaders to participate in interviews through convenience and purposive sampling. We purposefully sampled to get perspectives from a range of institutions. Three approaches were used to invite campus leaders. First, we sent out calls to the National Advisory Board of the National Resource Center for The First-Year Experience and Students in Transition to ask them to nominate campus leaders they thought would be suitable to discuss our topic. Second, we identified active members in NACADA and sent out recruitment emails to campus leaders. Third, we sent a call to the Advising Success Network HBCU Professional Learning Community. Between December 2020 and February 2021, we conducted semistructured interviews with 21 campus leaders who had responsibility for academic advising at 18 institutions. We gathered different opinions on using data from individuals at institutions that differed by structure of academic advising, types of institutions, and enrollment size. The summary of characteristics of the institutions is presented in Table A.1. Our interviews explored major topics relevant to data-driven and evidence-based approach in decision making, such as how campus leaders use data in

decision making and case making, how campus leaders use evidence to manage up and down in organizational chart, how campus leaders use data in their leadership (e.g., collaborate with other units on campus, foster a culture of using data), and how campus leaders use assessment and evaluation.

All participation in our interviews was voluntary. In this report, we do not identify the campus leaders' names in illustrative cases or direct quotations. Some direct quotations have been edited for grammar and clarity.

Analysis

We audio recorded and transcribed all the interviews. Then, we conducted content analysis to identify major themes to understand how campus leaders use data and evidence strategically. The themes presented in this guidebook are related to strategies used to build a consistent and coherent culture of academic advising and a culture of data use. We also identified examples to illustrate practices and strategies used in specific institutions.

Limitations

Our approach had several limitations. First, we interviewed a select number of campus leaders. Their perceptions and experiences do not necessarily reflect those of other institutional leaders and are not designed to be generalizable across multiple institutional types. Second, the leaders we interviewed engaged in different efforts and inputs associated with improving academic advising, which does not mean those institutions are most successful or have best practices in academic advising. The purpose of our interviews was to explore the practices and strategies used by campus leaders and to synthesize suggestions and strategies that other campus leaders can adapt to meet their institutions' needs.

TABLE A.1 SUMMARY OF CHARACTERISTICS OF INTERVIEWED INSTITUTIONS

Category	Number of institutions
Four-year institutions	14
Community colleges	4
Historically Black colleges and universities	3
Hispanic serving institutions	9
Private institutions	2
Institutions participating in the Integrated Planning and Advising for Student Success (iPASS) project	1
Institutions participating in Guided Pathways initiatives	1

Note. Several institutions fall into more than one category.