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Shifting Paradigms of Student Success: Integrating Noncognitive Assessment Into Hispanic-Serving Institutions

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Abstract

This report outlines a collaboration between Educational Testing Service (ETS), the Hispanic Association of Colleges and Universities (HACU), and three institutional partners to explore the integration of noncognitive assessments into student success efforts at Hispanic-serving institutions (HSIs). HSIs play a key role in providing access and fostering success for Hispanic students. Yet as the numbers of Hispanic students and HSIs have grown, achievement gaps persist. Noncognitive factors provide a new lens for addressing these issues by articulating the strengths and challenges of Hispanic students, as well as suggesting resources and strategies. While a future report will explore the empirical findings of this project, this report uses surveys and interviews of key assessment users to address the strategic, cultural, and logistic aspects of shifting to a holistic student success approach.

Key words: achievement gaps, college experience, Hispanic-serving institutions, noncognitive assessments, the *SuccessNavigator*® assessment

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Gaps and differences between Hispanic and White students exist at almost every point along the pathway into, through, and out of higher education (see Figure 1). Hispanic students are more likely to apply to only one college and are more likely to attend a community college (Excelencia in Education, 2018; Shapiro et al., 2017). Once enrolled, their college experiences are different. For example, Hispanic students are more likely to experience *mixed enrollment* (transitioning between full and part-time status) and are also more likely to be placed in remedial courses (Bettinger & Long, 2004; Kolodner, Racino, & Quester, 2017; Krogstad, 2016; Swail, Cabrera, Lee, & Williams, 2005). Ultimately, these differential paths lead to disparate rates of success, with Hispanic students being less likely to persist and graduate than White students (Excelencia in Education, 2018; Musu-Gillette et al., 2016; National Student Clearinghouse Research Center, 2017; Shapiro et al., 2017).

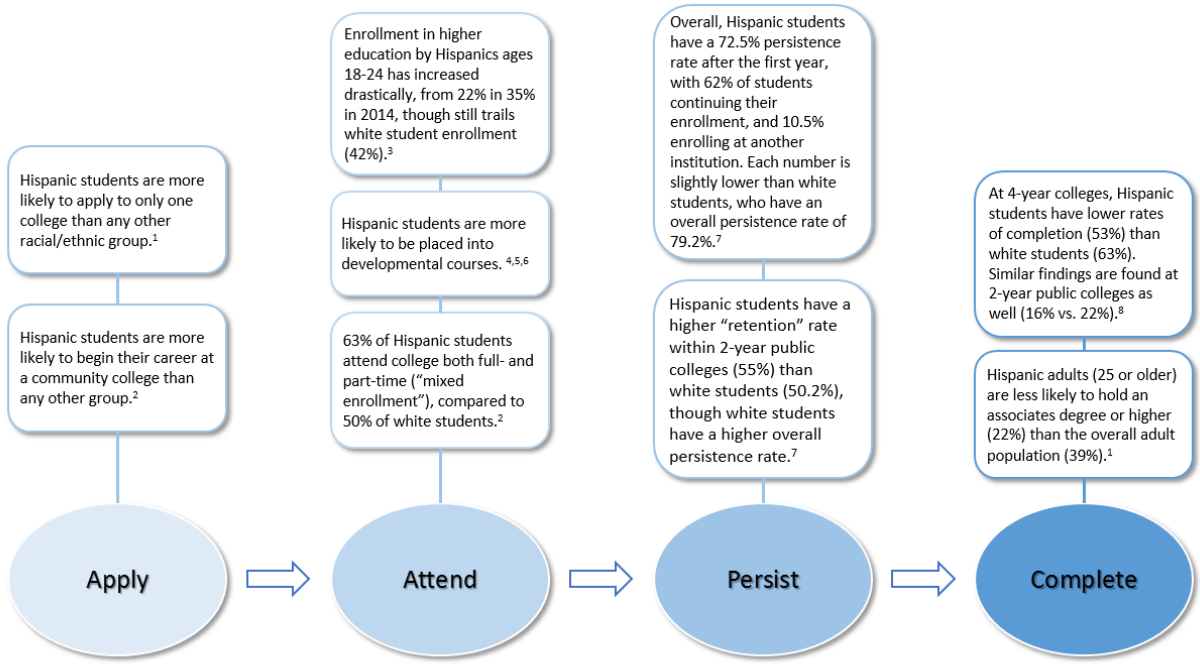

***Figure 1*. Differences and gaps in the student lifecycle for Hispanic students.**

One sector that has worked to close these gaps is Hispanic-serving institutions (HSIs), which serve a large number of Hispanic students enrolled in American higher education. Although these colleges and universities have incredible potential, given both their enrollment of and stated intention to support Hispanic students, they also face a challenge. Unlike some other minority-serving institutions (i.e., Historically Black Colleges and Universities [HBCUs] and

Tribal Colleges and Universities [TCUs]), HSIs were not founded explicitly to serve Hispanic students; rather, they have grown into this role as their enrollments have increasingly included Hispanic students. Given that HSIs have grown to serve Hispanic students over time rather than starting with that goal as their central mission (e.g., HBCUs, TCUs), these institutions might benefit from strategies and approaches that allow them to better consider the strengths and challenges that Hispanic students bring to college. These approaches may require a shift from traditional structures, student supports, and cultures to a paradigm that optimizes the strengths and challenges that Hispanic students bring to higher education.

One approach that could provide such guidance is the infusion of noncognitive skills into student success strategies. Noncognitive factors—skills, strategies, mindsets, and behaviors such as time management, motivation, responses to stress, and social connectivity—have been shown to play a key role in student success. Large-scale studies have shown significant predictive validity of noncognitive factors—in many cases finding them to be equal or stronger predictors of student retention when compared to academic factors such as admission test scores or high school grades (e.g., Markle, Olivera-Aguilar, Jackson, Noeth, & Robbins, 2013; Robbins et al., 2004). Additionally, research demonstrates the potential for noncognitive skill interventions to improve student success outcomes (e.g., Yeager & Walton, 2011).

At the intersection of these issues—that is, the role of HSIs in supporting Hispanic students and the potential for noncognitive factors to support student success efforts—lie the goals of this study. Although research has shown the importance of noncognitive skills, understanding how those relate to and impact institutional practice is a far less studied area. Similarly, whereas some studies have examined noncognitive skills within Hispanic students (e.g., intrinsic motivation and sense of belonging), there has been almost no dedicated examination of how noncognitive skill information can support and guide work at HSIs.

This report outlines a collaborative project supported by the Hispanic Association of Colleges and Universities (HACU) and Educational Testing Service (ETS). Three institutions—Valencia College (Orlando, FL), California State University–Fullerton (CSUF), and Texas State University—adopted an assessment of noncognitive skills and implemented its results within their student success efforts. The goal of this project was to examine how the results of such a measure could inform, support, and possibly improve student success efforts.

To that end, key student success personnel who were involved with the use of noncognitive assessment results were surveyed and interviewed. The information gathered was synthesized and used to address three main topics:

1. What are the existing student success strategies at these HSIs? What structures, processes, and resources exist, and how are they similar or different across these institutions?
2. How did each institution integrate noncognitive assessment into their student success efforts? What resources were needed, which personnel were involved, and how were results used?
3. What were the lessons learned and challenges faced from integrating noncognitive assessment? Overall, was this helpful to these institutions' student success efforts?

It is important to note that this report focuses on the practice and process aspects of considering noncognitive information while supporting students. A future report will outline the empirical results from this work, including the relationships of various academic, noncognitive, and contextual factors to student outcomes.

Hispanic-Serving Institutions

The number of Hispanic students enrolled in higher education has steadily risen over the past several decades (Krogstad, 2016; Núñez, Hurtado, & Galdeano, 2015). Moreover, Hispanic students have historically been concentrated at a subset of institutions, and this trend was recognized in the 1980s by higher education leaders. High percentages of Hispanic students at certain institutions, coupled with institutions' lack of resources to support the Hispanic students enrolled at their institutions, led to a policy shift. Institutions with a large population of Hispanic students were recognized as "Hispanic-serving institutions," a classification allowing institutions to receive federal dollars for additional resources and institutional support (Núñez, Hurtado, & Galdeano, 2015; United States Department of Education, 2011).

As specified by Title V of the Higher Education Act, HSIs are accredited, degree-granting higher education institutions whose enrollment is composed of at least 25% Hispanic full-time equivalent students. Currently, more than 490 institutions in the United States and Puerto Rico have HSI designation. The number of HSIs continues to grow, with more than 300 institutions classified as emerging HSIs, meaning they have a student population approaching

25% Hispanic students. Though 21 states and the Commonwealth of Puerto Rico are home to at least one HSI, the majority of HSIs are located in only six states (California, Texas, New York, Florida, Illinois, and New Mexico) and Puerto Rico. Nearly half of HSIs are community colleges, and though students do not need to identify as Hispanic to attend an HSI, Hispanic students make up the largest student group enrolled at 2-year HSIs (Núñez, Crisp, & Elizondo, 2015).

Hispanic Student Success

Figure 1 outlines some of the differences in various enrollment experience between Hispanic and White students. Indeed, gaps according to race/ethnicity, as well as other demographic characteristics, have been documented for some time. As far back as 1995, Eaton and Bean noted the following:

> Scholars base most research on retention on sociological principles and theory, and focus on groups rather than individuals. As a result, we know that some groups of students, such as educationally disadvantaged students and certain minority groups, often adapt poorly to their college environments. We know less about the characteristics of individuals within such a group that increase the likelihood of their remaining in school until graduation. (p. 617)

Thus, by examining if and how the paths of Hispanic students differ from their peers—such as the strengths and challenges they bring to college or their experiences during college—we may be better suited to understand why they succeed at different rates, rather than reaffirming that they do.

Academic preparedness has been cited as one possible factor in the success of Hispanic students (Nora & Crisp, 2012b), but it also demonstrates one way in which their path into and through higher education differs. Bettinger and Long (2004) found that Hispanic students are more likely than their White peers to participate in remedial college courses. Additionally, using data from the National Beginning Postsecondary Students Longitudinal Study (BPS 04/06), Nora and Crisp (2012b) found that more than half of Hispanic students in their study enrolled in a remedial mathematics course and nearly one fourth of Hispanic students enrolled in a remedial English course. Despite the prominent use of remedial courses in higher education and the likelihood for Hispanic students to enroll in remedial courses, research evaluating the

effectiveness of remedial courses on student success is limited. However, current findings do suggest that Hispanic students who complete remedial coursework at 4-year institutions are more likely to persist to their second and third years compared to Hispanic students who enroll at 2-year institutions (Nora & Crisp, 2012b).

In addition to academic preparation, financial barriers may pose additional challenges. Nora and Crisp (2012b) found that students who enrolled in remedial courses were less likely to receive financial aid compared to students who did not enroll in remedial courses at 4-year institutions, and when they were awarded financial aid, it was less on average than students who did not enroll in remedial coursework. The authors noted this difference in aid as troubling, as other research has shown financial stressors negatively influence students' sense of belonging ("a student's subjective feelings of connectedness or cohesion to the institution," p. 239) once enrolled in higher education (Maestas, Vaquera, & Zehr, 2007).

Family demands have also been cited as a particularly relevant factor for Hispanic students' enrollment and persistence. Hispanic students tend to have strong family ties, and family may encourage their students to attend an institution close to home or may not support the student pursuing higher education (Dayton, Gonzalez-Vasquez, Martinez, & Plum, 2004). Hispanic students who choose to attend higher education often experience conflicts between academic and family demands (Vasquez-Salgado, Greenfield, & Burgos-Cienfuegos, 2015), placing additional pressures on students that may hinder persistence. However, when Hispanic students have familial support, they may be more likely to persist to degree completion (Nora & Crisp, 2009; Talley & Ortiz, 2017; Vega, 2016).

HSIs attempt to buffer many of the barriers Hispanic students face. Research is both limited and mixed regarding the success of Hispanic students at HSIs compared to non-HSIs. Compared to Hispanic students at predominately White institutions (PWIs), Nelson Laird, Bridges, Morelon-Quainoo, Williams, and Holmes (2007) found that Hispanic students at HSIs reported similar satisfaction with the institution and similar levels of learning outcomes (e.g., higher order thinking, collaborative learning, and gains in development).

Even with potential similarities in experience between HSIs and PWIs, Hispanic students could still experience positive outcomes when attending HSIs. Laden, Hagedorn, and Perrakis (2008) found that Hispanic students who attended a 2-year HSI were more likely than both African American and White students to transfer to 4-year institutions.

Cultural diversity could be one mechanism by which HSIs benefit Hispanic students, as perceptions of a negative racial climate (e.g., feelings of discrimination, alienation) have been shown to hinder Hispanic students' sense of belonging (Hurtado & Carter, 1997), posing a potential challenge for Hispanic students at PWIs. The cultural diversity of HSIs positively influences Hispanic students' sense of belonging (Maestas et al., 2007), which may in turn positively influence Hispanic students' persistence to degree completion.

Noncognitive Skills and Student Success

In several studies already discussed, sense of belonging is cited as an important factor in Hispanic students' success, particularly within HSIs. But sense of belonging represents just one of a host of potentially relevant noncognitive factors. In a white paper presented to the HACU, Nora and Crisp (2012a) called for additional emphasis on other noncognitive factors such as coping, spirituality, college efficacy, resiliency, self-esteem, distress, and depressive symptomatology.

This call is supported by a wealth of research that broadly demonstrates the relevance of noncognitive skills to students' academic success and persistence. Large-scale meta-analyses have shown consistent predictive relationships between noncognitive factors and student first-year grade point average (GPA) and retention outcomes (Poropat, 2009; Richardson, Abraham, & Bond, 2012; Robbins et al., 2004). These relationships have been shown to be significant, even when controlling for previous academic achievement, such as high school grades and standardized admissions or placement test scores (Markle et al., 2013; Robbins et al., 2004).

What's more—and to the point of the aforementioned statement by Eaton and Bean (1995)—noncognitive skills have shown the potential to play an important role in student success for several traditionally underserved populations. For example, Li et al. (2013) studied students enrolled in developmental mathematics courses. They found that the relationship between classroom engagement (e.g., attendance, timeliness, participation) and course success was moderated by incoming academic preparation. Although the relationship was positive for all students, it was stronger for students with lower levels of preparation.

Other small scale studies have looked at noncognitive factors within various racial/ethnic groups. For example, Dennis, Phinney, and Chuateco (2005) found social support and motivation to be predictive of college adjustment for a sample of ethnic minority first-generation college students. In a sample of Asian American college students, Ting (2003) found that realistic self-

appraisal was nearly as predictive of success as *SAT*® scores. Yet these studies and others are limited to single-institution contexts and/or small sample sizes. Little has been done on a large scale to more thoroughly understand the roles that noncognitive factors play within these populations. Yet, as a whole, the research continually points to the importance of noncognitive factors in student success.

Project Purpose

Given that institutions could use information about students' noncognitive skills in variety of ways (e.g., predictive analytics, advising, curriculum; see Markle & O'Banion, 2014; Markle et al., 2013), the primary goal of this project was to examine how noncognitive skill information could be infused into student success strategies at HSIs. Specifically, ETS and HACU partnered with three HSIs to explore the role of noncognitive skills at HSIs. ETS is a nonprofit educational testing, assessment, and research organization with a mission to improve quality and equity in education. HACU is an educational association founded in 1986 with the purpose of representing HSIs and advocating for the needs of Hispanic students in higher education.

Both ETS and HACU recognized gaps in research and practice regarding Hispanic students and noncognitive skills. Thus, ETS and HACU partnered and together recruited three HSIs in order to (a) understand the implementation of student success tools at HSIs, (b) gather data on noncognitive skills of students enrolled at HSIs, (c) tie noncognitive assessment results to programmatic interventions, and (d) generate a report disseminating best practices among HSIs for examining noncognitive skills and improving student skills and retention.

To recruit institutions, ETS and HACU distributed a letter to all HACU members. Institutions were selected based on their interest and readiness to (a) assess at least 200 students, (b) align assessment administration to student success efforts, and (c) provide a plan for administering the assessments and programmatic intervention. Three HSIs were accepted to participate in the study: CSUF, Texas State University, and Valencia College.

Assessing Noncognitive Skills With the *SuccessNavigator*® Assessment

As part of the study, participating institutions used ETS's *SuccessNavigator*® assessment as a measure of students' noncognitive skills. SuccessNavigator was launched in 2013 to support institutions' student success initiatives, particularly around early experiences such as advising,

course placement, student success courses, and first-year experience programs. Assessing skills in four general areas—academic skills, commitment, self-management, and social support—SuccessNavigator assesses 10 factors that cover an array of attitudinal, behavioral, and social predictors of student success. (See Table 1 for more information about the constructs measured by SuccessNavigator, including example items.) A large-scale validity study conducted by Markle et al. (2013) provided initial reliability and validity evidence supporting the assessment, including a study of measurement invariance across Hispanic and White student populations.

Beyond measuring noncognitive skills, SuccessNavigator provides several reports to inform individual and institutional actions. Most work orients to the advisor report, which summarizes the strengths and challenges of an individual student and makes resource recommendations. This report is designed to be used by an advisor, coach, or counselor engaging in conversations with a particular student to structure feedback and action plans. There is a similar student-facing report that can be provided immediately following the assessment or later (e.g., during an advising conversation) if the institution prefers. Other features include an aggregate report and access to raw data, if the institution chooses to use noncognitive data in strategic decision making or to compare groups of students.

Lastly, as part of the project, ETS also provided access to support and training to foster buy in and promote the effective use of assessment information. In some cases, training was provided through in-person campus visits. In others, online webinars were used for both informational and skill-based training (e.g., interpreting scores, structuring conversations with students). Training was offered at all levels of adoption (e.g., senior administration, front-line advisors), and two institutions also used a "train the trainer" approach to disseminate information. As training was viewed as a key component of implementation, the description of each institution's experience is provided below to give greater detail on the training and support process.

Table 1. SuccessNavigator Construct Map

General skill	Subskill	Definition	Example items
Academic	Organization	Strategies for organizing work and time.	I make a schedule for getting my school work done. I take due dates seriously.
	Meeting class expectations	Doing what's expected to meet the requirements of your course including assignments and in-class behaviors.	I attend almost all of my classes. I complete the reading that is assigned to me.
Commitment	Commitment to college goals	Perceived value and determination to succeed in and complete college.	One of my life goals is to graduate college. The benefit of a college education outweighs the cost.
	Institutional commitment	Attachment to and positive evaluations of the school.	This is the right school for me. I'm proud to say I attend this school.
Self-management	Sensitivity to stress	Tendency to feel frustrated, discouraged or upset when under pressure or burdened by demands.	I get stressed out easily when things don't go my way. I am easily frustrated.
	Academic self-efficacy	Belief in one's ability to perform and achieve in an academic setting.	I'm confident that I will succeed in my courses this semester. I can do well in college if I apply myself.
	Test anxiety	General reactions to test-taking experiences, including negative thoughts and feelings (e.g., worry, dread).	When taking a test, I think about what happens if I don't do well. Before a test, my stomach gets upset.
Social support	Connectedness	A general sense of belonging and engagement.	I feel connected to my peers. People understand me.
	Institutional support	Attitudes about and tendency to seek help from established resources.	If I don't understand something in class, I ask the instructor for help. I know how to find out what's expected of me in classes.
	Barriers to success	Financial pressures, family responsibilities, conflicting work schedules and limited institutional knowledge.	Family pressures make it hard for me to commit to school. People close to me support me going to college.

Note. Academic skills are tools and strategies for academic success. Commitment skills refer to the active pursuit toward an academic goal. Self-management skills address reactions to academic and daily stress. Social support skills refer to connecting with people and student resources for success.

The conclusions drawn in the remainder of this report were gathered through conversations with key constituents at each institution, beginning with the primary project liaison (most often the leader of the first-year experience initiative) and including other perspectives when necessary or helpful to understanding the process. These conversations were initiated by an open-ended survey (see the appendix), which was followed by phone interviews to provide greater depth or answer more specific questions. Trends and general findings from these responses were established by the authors without formal coding processes.

Participating Institutions: Implementation, Challenges, and Successes

This section discusses the implementation and administration of noncognitive assessment at each institution. For each school, the student success context, involvement of faculty, staff, and students, perceived challenges, and observed successes are discussed.

California State University–Fullerton

Student success context. CSUF is a public, 4-year university in Fullerton, California. The largest of the 23 California State Universities, CSUF's student population—roughly 40,000 in total—is 42% Hispanic, 21% Asian, 20% White, and 2% African American. CSUF strives to be a national model for student success by providing innovative student experiences, a core component of which is a first-year experience (FYE) program designed for transitioning undeclared students to college life. Through the FYE program, undeclared students are connected to peer mentors and faculty/staff advisors who assist students in connecting to campus resources and declaring a major. All students who participate in the FYE program must enroll in University 100, a course focused on success strategies such as time management and study habits, as well as exposure to various majors and cocurricular activities.

The 2017–2018 academic year represented one of transition for the FYE program. In addition to participating in the ETS–HACU project, CSUF hired four Student Success Fellows to join the FYE team. The Student Success Fellows were graduate students from counseling and higher education programs who met with students regarding their SuccessNavigator results. The Student Success Fellows were hired in Summer 2017, allowing them to oversee the use of SuccessNavigator results (without adding additional work to existing FYE staff). These changes were overseen by an interim director of the FYE.

Implementation of SuccessNavigator: Staff. Prior to administering SuccessNavigator, several virtual meetings were held between ETS and CSUF staff to provide an overview of the assessment and its use. During these initial meetings, the primary goal was to provide guidance and best practice on administration of the assessment and integration of results into the FYE program. During the fall semester, ETS staff visited CSUF's campus to conduct in-person training with administrators as well as the Student Success Fellows. Administrators provided additional training to FYE faculty and Student Success Fellows throughout the 2017–2018 academic year.

Given their background in counseling and higher education, Student Success Fellows were familiar with facilitating discussions with students. They were offered supplementary training in success coaching with college students. When meeting with students, Student Success Fellows took detailed notes summarizing their discussion and shared the notes with FYE faculty and CSUF administrators.

Implementation of SuccessNavigator: Students. All 835 students enrolled in University 100 were invited to complete the SuccessNavigator assessment. In total, 684 students (81.9% response rate) completed the SuccessNavigator assessment during the first 2 weeks of the Fall 2017 semester. Administration time and method differed depending on the faculty. Later in the semester, students had the option to meet individually with a Student Success Fellow to discuss their results. Students were not required to meet to discuss their results, though University 100 faculty encouraged students to meet with their respective Student Success Fellow. Students who chose to meet with their Student Success Fellow planned personal goals that they desired to work on during the Spring 2018 semester.

Challenges and anticipated changes. As with many new initiatives, one of the biggest hurdles to adopting a noncognitive assessment was obtaining faculty and staff buy in. This was particularly challenging at CSUF, as the project took place during a semester when several other changes occurred in the FYE program. However, discussions with ETS representatives mitigated many concerns about the assessment, such as cost, time allocation, and available support.

FYE faculty varied in their buy in for the project, possibly because—in the eyes of CSUF staff—the explanations regarding the purpose and goals of the project were lost among other changes. Faculty did not immediately understand the purpose behind SuccessNavigator. However, after assurance that the assessment would not be an addition to their workload, FYE

faculty were largely supportive of the assessment. In the future, CSUF administrators intend to more clearly articulate the purpose of the project early in the process and make faculty buy in a priority.

Though CSUF experienced a high response rate for SuccessNavigator completion, some students rushed the assessment, thereby yielding responses unrepresentative of students' noncognitive skills. Though this issue was not prevalent (4.1% of respondents), any unusable results were problematic because Student Success Fellows and CSUF administrators could not adequately identify and assist students.

Highlighted successes. Results from the assessment aligned with many anecdotes CSUF administrators had previously heard from students. For example, results suggested that students' primary concerns related to the financial and the social aspects (e.g., leaving friends from home) of transitioning to college. As such, CSUF used SuccessNavigator to empirically demonstrate what had been suspected but not conclusively affirmed.

Using assessment data, CSUF administrators have implemented several changes and new programs for students. For example, CSUF implemented a "Chill and Chat" program during which students discussed topics such as family obligations, mental health, and self-compassion. Student Success Workshops were also implemented during which students learned about topics such as having difficult conversations, developing leadership styles, setting goals, and navigating personal issues while at college.

According to CSUF staff, these programs help to create a stronger cocurricular experience in which students reflect on their noncognitive skills and explore methods to improve them. Moving forward, CSUF administrators see SuccessNavigator as a way to infuse noncognitive skills into the discussion of student learning, thereby fostering their mission to be a national model for student success.

Texas State University

Texas State University is a public, 4-year university in San Marcos, Texas. Of Texas State's nearly 40,000 students, 36% are Hispanic, 47% are White, and 10% are African American. As one of the fastest-growing institutions in Texas, Texas State takes seriously the experiences of first-year students and is committed to supporting all students entering the university.

At Texas State, first-year advising is conducted through the Personalized Academic and Career Exploration (PACE) center. The PACE center was created in 2011 as part of Texas State's Quality Enhancement Plan for its regional accreditor (SACS-COC) and was designed for the purpose of assisting students with their transition into college. The PACE center's mission is to provide proactive academic advising and programming to first-year students. By partnering with campus resources and fostering an environment that engages students in their educational journeys, PACE staff provide comprehensive advising beyond major selection and course scheduling. The PACE center strives to instill self-advocacy and empower students to take charge of their college experiences, and it does so through several types of coaches and advisors:

- Academic advisors. Academic advisors assist students in choosing the classes best for their major and academic goals. With their academic advisors, students build class schedules and develop educational plans to meet graduation requirements on the desired timeline. PACE is staffed by 18 academic advisors.
- Academic coaches. Academic coaches offer students strategies for being successful in their first year and beyond. Students receive tips on topics such as study skills, goal setting, time management, financial literacy, and money management. PACE is staffed by 19 academic coaches.
- Career exploration counselors. Career exploration counselors assist students in identifying career goals and the steps necessary to meet their goals. With career exploration counselors, students may develop and review resumes and other materials necessary for internships, jobs, and/or graduate school. PACE is staffed by three career exploration counselors.
- Peer mentors. Peer mentors assist students with general transitioning to the university community. Peer mentors may assist with social or academic transition and integration to Texas State. PACE is staffed by 115 peer mentors.

Because all coaches and advisors are located in the same center, students receive attention that can assist them holistically, addressing academic, social, and personal issues. In addition to meetings with advisors and counselors, PACE offers a university seminar in which all first-year students enroll. The seminar is staffed by faculty and is designed to assist students in

identifying campus resources and support networks, as well as connecting students to each other. Faculty of the seminar offer planned lectures as well as one-on-one mentoring to students.

PACE is a requirement for all first-year students who have completed less than 15 credit hours since high school graduation; thus, the initiative connects with nearly all first-year students. Traditionally, the focus of academic advising meetings has been academic, addressing major and course selection, with little or no emphasis on noncognitive skills. However, administrators at Texas State recognized the importance of noncognitive skills in fostering students' motivation, attitudes, and interpersonal interactions. These skills are necessary for success inside and outside of the classroom, and Texas State recently initiated a shift in its advising philosophy toward a culture of student development and consideration of noncognitive skills in students' academic decisions (e.g., major changes and retention).

In support of this philosophy shift, Texas State opted to participate in this project as it provided an opportunity for the university to focus on noncognitive skills in a large-scale manner. Moreover, in the longer term, this project will allow Texas State to evaluate whether emphasizing noncognitive skills could improve retention at the institution. Currently, Texas State has a first-year retention rate of 77%, though it strives to meet 80% first-year retention. Logistically, Texas State was looking for noncognitive assessment to (a) assist academic advisors in identifying students with a lower likelihood of success and (b) connect students to resources that may facilitate their success and retention.

Implementation of SuccessNavigator: Staff. SuccessNavigator was implemented in a 3-month time span. In those 3 months, PACE staff were trained on the purpose of the assessment, how to interpret score reports, and how to use results to guide conversations with students. The training occurred in a tiered, multistep process. First, all PACE staff participated in an introductory overview webinar conducted by ETS. PACE staff were trained further in areas necessary for each staffer's respective position.

For example, peer mentors participated in additional training regarding how to work with students who scored low on particular noncognitive skills. Academic advisors received the most training, as they were expected to share score reports with students and initiate conversations about results. Academic advisors were trained on five different occasions during the 2017–2018 academic year. The first training occurred in the summer, two trainings occurred in Fall 2017, and two trainings occurred in Spring 2018. In accordance with Texas State's shift in advising

philosophy, all trainings sought to promote engaging and developmental conversations with students, rather than transactional interactions (e.g., providing lists of majors, courses).

Critical to implementation was the buy in of PACE staff. SuccessNavigator was introduced to staff as a tool that could help engage students during advising sessions, as well as help students learn about campus resources and their own noncognitive skill development. Administrators promoted the project as an opportunity to promote best practices in student development and improve student success at Texas State. Prior to implementation, PACE staff had mixed perceptions of the project. Many staff were on board and immediately saw value in the project. However, other staff saw the project as an additional requirement on top of already full loads. After implementation of the tool, most advisors were on board and recognized the benefits evaluating students' noncognitive skills.

Implementation of SuccessNavigator: Students. All incoming first-year students who were part of PACE (5,732 in total) were invited to complete SuccessNavigator during Texas State's first-year orientation week, which occurred at the start of the Fall 2017 semester. Ultimately, 4,175 students (72.8% response rate) completed the assessment on their own time during the allotted week. After students completed the assessment, they were prompted to sign up for a meeting time with their advisor.

Student score reports were not immediately distributed to students, though results were discussed between the student and advisor during their mandatory advising sessions. As PACE only has 19 academic advisors, and advisors may only see 50 students a week, students met with advisors any time between the first week of the semester to after midterms.

Challenges and anticipated changes. As with CSUF, one challenge for Texas State was garnering buy in from its 150+ PACE employees. Advisors are integral in the success of students yet often have multiple responsibilities. Thus, as with any new initiative, the addition of a noncognitive assessment was in some cases seen as adding to already full workloads. Moreover, while academic advisors are experts in course scheduling and major options, they did not have experience with noncognitive data or report interpretation prior to this project. Lack of background in these areas posed a challenge to some academic advisors, hindering the full use of score reports. In future years, Texas State would like to more deeply address these issues in initial trainings, hopefully promoting the use of the results to their full potential. Moreover,

administrators at Texas State view the ability to discuss and address noncognitive skills as part of their transition from a "transactional" to "developmental" advising model.

Texas State also faced challenges relating to scope, as it elected to assess several thousand students as part of the project. Though useful information was gathered, the undertaking to assess each student and require them to meet with their advisors was large. Because Texas State only has 19 advisors, and each advisor could only see 50 students a week, some students were unable to meet with their advisors for several weeks or months. Consequently, some at-risk students were connected to resources too late in the fall semester. Though Texas State intends to continue using SuccessNavigator to assess first-year students' noncognitive skills, future efforts will consider how to more effectively identify and support at-risk students as well as how to better allocate advisor time, which is a limited and valuable resource.

Another challenge for Texas State involved facilitating conversations with students when SuccessNavigator results did not align with students' perceptions of their skills. In some instances, students believed they were transitioning well to college, yet results showed low scores on some indicators. When this contrast occurred, advisors found it difficult to discuss results with the student and disentangle whether the results truly did not reflect the student or whether the student had an unrealistic perception of his or her abilities. Advisors acknowledged that it may be useful to clearly explain the value of the assessment during administration, hopefully increasing students' motivation when completing the assessment and subsequently improving the validity of their responses and scores. It might also be necessary to add training to help advisors structure conversations with students who have not accurately appraised their noncognitive skills.

Highlighted successes. Though the scope of the project posed a challenge for Texas State, staff perceived several benefits in advancing the student success processes. By using noncognitive results, advisors were able to target individual students and intentionally suggest resources on campus based on student needs. Academic advisors felt that many students were connected to resources who otherwise would not have been. Moreover, PACE staff indicated that student meetings were shifting toward engaging and developmental conversations, as students asked more questions of advisors and sought additional resources after advising meetings. In the

eyes of Texas State staff, students took more responsibility for their success and sought assistance when needed.

Though this is a benefit and fulfills a goal Texas State had for participating in this project, it also creates additional challenges. Because advisors receive follow-ups and questions from students, advisors must dedicate more time to each student, creating a heavier workload. Consequently, PACE staff engaged in conversations regarding policy for assisting students. Specifically, PACE staff are in the process of exploring what types of questions they should respond to, when a response warrants a meeting rather than an email, and how to best guide students rather than make decisions for students. Despite some challenges, staff from Texas State feel the university was able to make progress toward a developmental model of advising, which was an important part of the project for them.

Valencia College

Valencia College is a public community college in Orlando, Florida, offering both associate's and bachelor's degrees. Valencia has seven campuses located in Florida, with each campus offering respective degrees. Additionally, Valencia offers credit-bearing courses at business locations and high schools in Orlando and the surrounding areas. The Poinciana campus is the newest Valencia campus and opened for classes August 2017.

Prior to this year, Valencia implemented the Learning and Study Strategies Inventory (LASSI) to assess noncognitive factors such as time management, motivation, anxiety, and use of academic resources, among others. Though LASSI was implemented at most Valencia campuses this year, the Poinciana campus implemented SuccessNavigator in place of LASSI as part of the campus's commitment to identifying innovative ways to improve student success. By implementing SuccessNavigator, administrators at the Poinciana campus hoped to identify at-risk students and improve outreach strategies for struggling students.

Valencia has a larger goal and plan for outreach to at-risk students, and the ETS–HACU project was thought to serve as a start to the plan to consider student skills in a holistic, nonacademic sense. The college's goal was to combine SuccessNavigator results with other indicators, such as midterm grades, to identify at-risk students and explore additional interventions that could be useful for them. Because the Poinciana campus is new and has a relatively small population (roughly 500 incoming students) compared to other Valencia

campuses, it was considered easier to implement a new assessment process for students and use the Poinciana campus as a pilot for the college's outreach plan.

At all Valencia campuses, students participate in a new student experience (NSE) course designed to assist them with the "6 Ps" of college transition: purpose, pathways, personal connection, sense of place, plan development, and college preparation. Students also receive individualized advising from their NSE faculty, which provides students with a mentor within their first year of college before they are assigned to a full-time academic advisor after their first year at Valencia. NSE faculty have varying backgrounds, but all are provided training for how to advise students and tips for implementing a successful NSE course. Though NSE faculty have freedom to integrate their own teaching style into the NSE course, the syllabus is common across all sections of NSE. As the 2017–2018 academic year was the first at the Poinciana campus, several of the faculty in the NSE course had been newly hired.

Implementation of SuccessNavigator: Staff. Valencia chose to provide training to key members of its administrative team in order to target various areas of campus. Specially, Valencia's manager of community outreach, manager of learning support, and director of student services were trained by ETS in what SuccessNavigator is and how the assessment may be used as an effective tool with the Poinciana campus students. These staff were chosen for training in order to inform individuals across campus of the ETS–HACU project. NSE faculty were then given a similar training and were provided with scripts and slide shows to use when administering SuccessNavigator in their NSE courses.

NSE faculty's enthusiasm about the implementation of SuccessNavigator varied. Some faculty recognized the benefit of implementing such an assessment, whereas other faculty saw the project as an extra requirement for their course. Several NSE faculty were also new hires, creating an additional challenge for administration and use of noncognitive assessment data. To motivate faculty to implement SuccessNavigator and discuss results with students, faculty signed a contract outlining the use of assessment in their NSE course.

Implementation of SuccessNavigator: Students. Of the 219 invited students, 209 (95.4% response rate) completed the SuccessNavigator assessment in the 2017–2018 academic year. The 219 students came from two samples: a Fall 2017 pilot from one section of the NSE course, and all NSE courses in Spring 2018. To allow faculty flexibility in the course, the time of SuccessNavigator administration was not standardized in the spring semester, and students could

take the assessment as time allowed between January and May. After completing the assessment, NSE faculty were expected to discuss results with students and connect them to campus resources, if needed. Though faculty were contracted to engage in discussions with students based on SuccessNavigator results, it is unclear the extent to which these conversations occurred.

Challenges and anticipated changes. A major challenge to interpreting SuccessNavigator results at Valencia was that students were not required to take the assessment during a specified time frame. Students may have changed dramatically over the course of a semester, and results may have differed based on whether students took the assessment at the beginning or the end of the semester. This change can create challenges when trying to interpret the aggregate findings and make inferences about the student population.

The lack of a specific assessment window also had practical implications, as students who could benefit from campus resources may not have been connected with the appropriate resources early enough in the semester. To better meet their goal of using SuccessNavigator to engage in outreach to at-risk students, Valencia administrators hope to create additional guidelines for implementing the assessment, with the goal of obtaining results that can be usable for individual students.

As with other institutions, buy in from faculty was a challenge at Valencia. Though some faculty saw value in the project, others did not understand the purpose of the project or were new faculty already tasked with learning about the NSE course. In effect, the extent to which faculty provided advising based on SuccessNavigator results likely differed across NSE course sections. In future years, Valencia administrators hope to identify ways to engage faculty in the assessment process from the beginning. By engaging faculty at the beginning of the process, they may feel more ownership over the project and opt to administer SuccessNavigator on a set timeline and fully participate in using results to start conversations with students.

Similar to CSUF, Valencia staff also encountered a small number of cases where—from their perspective—assessment results did not match with student experiences. In one case, a student with several low noncognitive scores ultimately made the dean's list at the end of the semester. This raised concerns about the validity of responses, which opposed the team's interpretation of that student's results. Subsequently, two issues were raised.

First, perhaps the student did not devote his or her full attention to the assessment. Considering this possibility, the Valencia team considered ways of encouraging students to take

the assessment seriously, such as promoting faculty buy in so that they could relay their support to students. In turn, students may be more likely to recognize the benefits of the assessment and put forth effort when responding.

A second issue raised is in the ability of faculty and staff to interpret scores. Even when a student has several noncognitive challenges, those factors are not completely determinant of failure. A student's skills may change, he or she may receive support from various resources, or other factors might intervene to promote success. Thus, the perception of invalidity may not be due to a characteristic of assessment results (i.e., a validity issue), but rather the faculty's and staff's interpretation (i.e., a training issue).

Though noncognitive data provided useful information to many NSE faculty and Valencia administrators, Valencia hopes to collect additional qualitative information to gain further insight into the student experience at the Poinciana campus. In Fall 2018, the Poinciana campus administrators hoped to conduct focus groups and use qualitative information alongside the SuccessNavigator results to identify additional changes and interventions that could assist students in their transition to college.

Highlighted successes. At Valencia College, the primary goal of the project was to better understand the incoming student experience and improve outreach to at-risk students. Overall, SuccessNavigator provided Valencia administrators with useful information about students' experiences and provided a context useful for Valencia administrators to implement new interventions. Specifically, Valencia created academic success plans for students who (a) scored low in noncognitive indicators, (b) achieved an end-of-semester GPA below 2.0, and (c) were at risk of failing one or more courses based on internal predictive models. Students who met these criteria were encouraged to meet with an advisor to further discuss assessment results, academic performance, and additional resources to explore at Valencia.

Though many students did not follow through with these meetings, some students who did re-enrolled in classes. Valencia staff relayed a story of one student who verbally indicated that she did not plan to re-enroll in classes for the next semester. However, after meeting to discuss her assessment results, develop an academic success plan, and connect her with resources, she re-enrolled in courses. Valencia administrators believe that this student would not have been identified without SuccessNavigator.

At Valencia, plans are underway to identify additional methods to encourage students to meet with the student success staff to develop academic success plans. This initiative is considered especially important considering that students' financial aid is in jeopardy if their GPA falls below 2.0. Given that many students at Valencia are first-generation and work more than 20 hours per week, financial aid is perceived as highly important.

The team at Valencia also acknowledged the potential for noncognitive data to assist NSE faculty. Using SuccessNavigator results, Valencia administrators were able to identify NSE faculty who had a large number of at-risk students enrolled in their NSE course. In effect, administrators were able to have discussions with specific NSE faculty who were in the most need of resources for their students. In the future, Valencia administrators believe they can use noncognitive results to identify not only students but also faculty who may need additional assistance or training to support their students.

Common Themes and Highlights

From the three participating institutions, we identified several common themes regarding their implementation and use of noncognitive assessment data. Together, these themes demonstrate both the challenges and the benefits of a holistic approach to student success.

Shifting to a Developmental, or Transformational, Advising Model

In recent years, researchers and practitioners of college student advising have discussed a shift from traditional transactional models of advising to more transformational, or developmental, approaches (Barbuto, Story, Fritz, & Schinstock, 2011; Grites, 2013). Transactional advising is generally defined by the provision of information (e.g., available classes, majors, resources) and the direct instruction of steps that students should take. Transformational, or developmental, approaches shift to more of a coaching model, whereby advisors seek to identify strengths and challenges, help develop skills and strategies, and overall attempt to guide students as they build their own path to success.

In this project, such a transition was very explicit for Texas State, but it was also implicitly part of the efforts at both CSUF and Valencia. Even though these institutions were not seeking a cultural change in advising—advisors were not even the central agents in the project—focusing on students' noncognitive skills and strategies and connecting students with resources represented an emphasis on more transformational advising practices.

At each institution, staff from the participating institutions noted that SuccessNavigator helped to identify at-risk students and start meaningful conversations with those students. Results were used to have individualized conversations, promoting a developmental approach to advising. In some cases—and, indeed, at other institutions—such an approach might only affirm what was already suspected about students. In other instances, SuccessNavigator provided new information about the state of students and their experiences on campus. Regardless, without assessment data, it can be difficult to structure developmental conversations with students and articulate a holistic set of strengths and challenges.

Though SuccessNavigator is a useful tool, it, in and of itself, will not help students or address issues that students experience on campus. Rather, the power of holistic assessment is the ability to use results to facilitate meaningful, developmental conversations with students and staff. When advisors and/or faculty have individualized conversations with students, students can receive resources they actually need, take responsibility for their education, and foster their continued success.

Garnering Buy In for Institutional Change

Another common theme was the challenge to foster buy in from various campus partners. When implementing any organizational change, faculty, staff, administrators, and even students must see the potential benefit and support the initiative. Particularly in the case of holistic assessment, where information will be used to change interactions with students, support from those staff who are on the ground working with students and using assessment results is especially important.

Each institution suggested that they wanted to improve buy in from their advisors and/or faculty in future administrations of SuccessNavigator. All of the participating institutions admitted that they did not provide adequate background information and training to effectively pitch the idea of SuccessNavigator to their staff. In effect, some advisors and/or faculty did not see the benefit of the project and struggled to see past the notion that the project may add additional work to their already full workloads. Each team reported that this perception could be aided by not only providing more lead time for understanding the transition, but also tying changes to the larger strategic plan (e.g., shifting to a developmental advising model).

In addition to strategic adoption, frontline users must also understand how assessment administration and use will affect their existing workload. Many institutional changes are added

to already full workloads, providing an additional hurdle to buy in. Only at CSUF were additional staff hired with the explicit purpose of having holistic conversations with students. Interestingly, CSUF was also the institution that seemed to have the least difficulty obtaining buy in from faculty who were asked to administer SuccessNavigator.

Using process mapping to articulate important steps in a student success strategy can be one way of garnering both strategic and logistic buy in for an effort such as holistic assessment. By demonstrating how various components of a process interact with one another, faculty, staff, and administrators can better understand what is expected and what is necessary to achieve it. Moreover, a process map can improve understanding of the student experience and what communications or interventions might be necessary to move a student from one stage of the process to another. Figure 2 displays an example process map that integrates orientation, advising, and other student experiences, including enhanced student interventions for students who may be at risk.

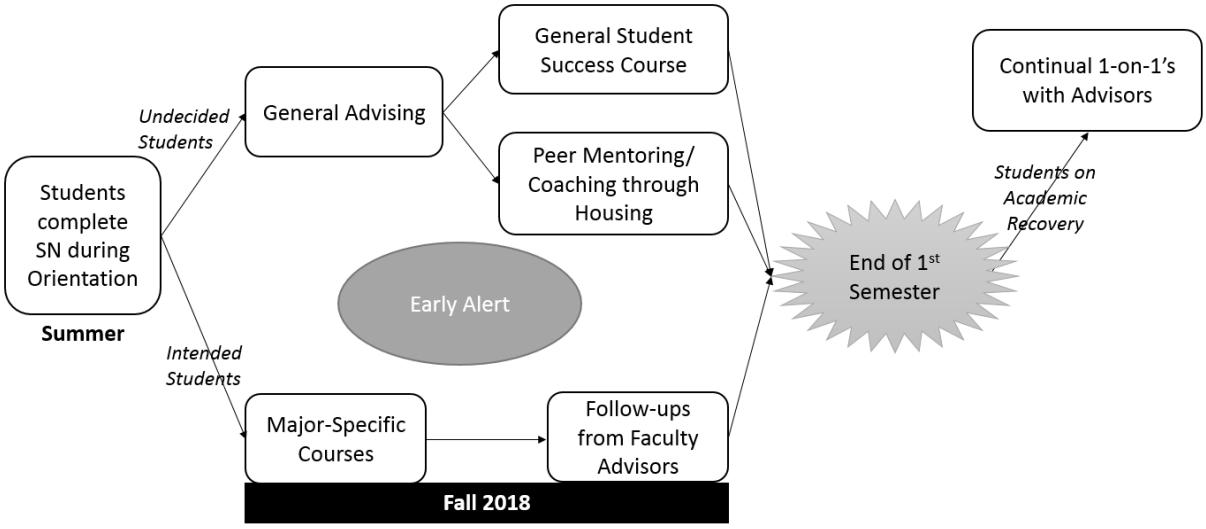

***Figure 2*. Example process map for assessment completion and integrating student supports.**

If noncognitive assessment is to be used to its full potential, advisors and faculty must see value in the assessment and the overall strategy that the assessment is supporting. If advisors and faculty do not value the results, they may be unlikely to use them, hindering any positive outcomes that students could experience as a result of conversations about their strengths and

challenges. Each participating institution recognized the need for support from advisors and faculty, and although each acknowledged challenges, each was also dedicated to improving buy in during future assessment efforts on their campus.

Need for Additional Training

At both Texas State and Valencia, faculty and advisors indicated a desire for additional training surrounding report interpretation. At Texas State specifically, advisors needed additional training to effectively use the score reports with students. Though interpreting score reports may be second nature for assessment personnel, this is not always the case for staff who do not work in the assessment field. Advisors at Texas State genuinely wanted to use the results in their discussions with students. However, lack of experience reading score reports hindered the use of results. At Valencia, faculty seemed to suggest that they felt adequately trained for using the score reports. However, faculty wanted additional training regarding data analysis and how to explore data for trends. Though the score reports were useful and aggregate information was provided from ETS, faculty desired further data exploration.

A common theme expressed across all participating institutions was that they did not know what they did not know until after the project was underway. ETS provided trainings and support in various formats, such as webinars, phone conversations, and in-person trainings. And though staff continually reported that these trainings were helpful, each institution did not recognize what questions they had until specific situations arose. For example, Texas State did not consider that interpreting score reports would be a barrier for some advisors and hence did not request additional training for interpreting and using score reports. Now that the first administration of SuccessNavigator is complete, each institution is aware of what challenges they can expect and how they can preemptively mitigate barriers.

The issues of training and buy in likely tie into the initial point of strategy shift. While holistic assessment may be a valuable tool, a tool's value is primarily determined by its use. If noncognitive information isn't supported by the necessary resources and culture, the information it provides essentially has no context into which it can fit.

Figure 3 demonstrates the theory of action for SuccessNavigator. A theory of action identifies key assessment components (e.g., scores, reports), how those use components are used, and what the intended outcomes are of that use (Bennett, 2011). While an institution might assume or infer that simply assessing noncognitive skills could improve student success, that

improvement is dependent upon actions by students and those working with them (e.g., advisors). Without proper training and guidance, those actions are unlikely to take place.

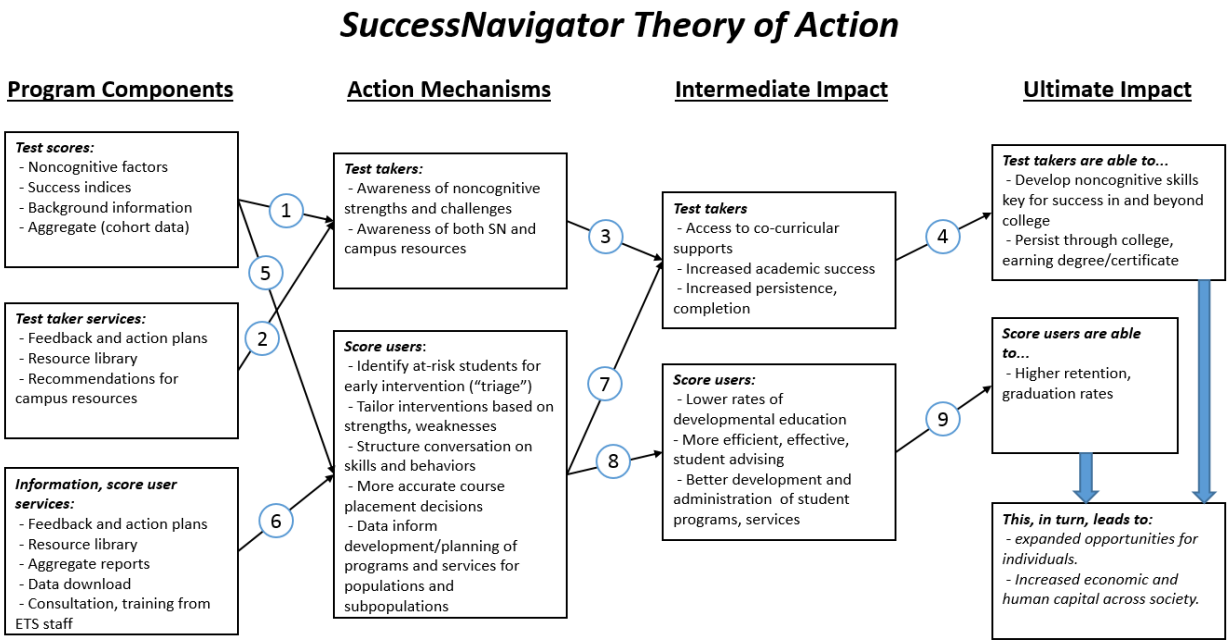

***Figure 3*. SuccessNavigator theory of action. From *Noncognitive Assessment: Users, Use, and a Theory of Action*, by R. E. Markle, April 2017, paper presented at the meeting of the National Council on Measurement in Education, San Antonio, TX. Copyright © 2017 Educational Testing Service.**

Assessment Administration and Validity

Several institutions encountered select cases where assessment results were counter-intuitive or even misinterpreted. For example, in some cases, SuccessNavigator results suggested students had noncognitive challenges, yet other information such as course grades or student anecdotes suggested that students were adjusting well.

Part of this issue may result from SuccessNavigator's use of self-report, Likert-type items to measure noncognitive skills. Research has certainly noted that this methodology can be susceptible to validity threats such as faking (Dilchert, Ones, Viswesvaran, & Deller, 2006), response biases (or styles; Paulhus & Vazire, 2007), and low student motivation (Thelk, Sundre, Horst, & Finney, 2009). Ultimately, actual or perceived validity can be impacted by various factors discussed here, including student motivation or one's ability to accurately interpret score

reports. A sizable body of research has in fact shown the ability of noncognitive assessments—largely using self-report methodology—to predict student success in higher education (Markle et al., 2013; Poropat, 2009; Richardson et al., 2012; Robbins et al., 2004), but it is important to consider ways that various contextual factors might inhibit the validity of scores.

Research into low-stakes assessment in higher education has shown that the context in which students take assessments plays a significant role in impacting the reliability and validity of their scores (Lau, Swerdzewski, Jones, Anderson, & Markle, 2009). While studies of SuccessNavigator responses have shown that students largely engage effectively with the assessment (Markle, Wang, Sullivan, & Russell, 2015), students still can—as with almost any assessment—fail to display effort or otherwise perform in a way that would hinder the use of their results.

Another important consideration is the understanding of individual students as opposed to aggregate findings. In many cases where correlations exist, there can be individuals who do not follow the trend. With noncognitive assessment, for example, simply because a student has several challenges (i.e., low scores), success is certainly still possible. In this case, the issue is not with the validity of assessment results, but rather the ability of faculty and staff to effectively and appropriate interpret them. This suggests an issue of training (i.e., assessment use) rather than assessment validity.

Ultimately, as with training and buy in, the issue of context becomes important. Each participating institution recognized the importance of student buy in and motivation on the SuccessNavigator assessment, and they intended to identify ways to improve student motivation during future administrations. Standardizing the process by which students take the assessment—another benefit of process mapping—and emphasizing the use and importance of assessment results are strategies by which institutions can work to maximize student engagement with the assessment.

Supporting Hispanic Students Within HSIs

One of the goals of this report was to examine the student success efforts in place at each participating institution to identify similarities and differences. The strategies used in this project—such as advising, student success courses, and FYE programs—are actually common institutional approaches and not specific to HSIs. The institutions involved certainly have dedicated efforts (e.g., Texas State University, 2018) and have even received recognition for

supporting Hispanic students (e.g., Fawthrop, 2018; Valencia College, 2013). Yet in the processes of considering holistic assessment results or directing interventions, intentional efforts were not made to direct, support, or consider Hispanic students.

Using noncognitive assessments, as well as other data-based approaches to student support, we identified two approaches that could benefit HSIs in supporting Hispanic students. One is the approach mentioned here, which is the structuring of conversation and connecting with resources that can occur with individual students. Indeed, this approach could benefit any student, regardless of background. For Hispanic students, it could allow advisors to address issues such as social support and sense of belonging, which—as previously mentioned—have been identified as pertinent to Hispanic students.

The second tactic would be to use these data to identify strengths and challenges that are common for Hispanic students in order to identify potential resources. For example, if sense of belonging was a challenge among a large portion of Hispanic students, providing commensurate resources during new student orientation or a student success course could better support Hispanic students. A future report will look at data from these three institutions to identify and demonstrate such large-scale strategies.

Conclusion

Although research into noncognitive skills has attempted to provide insights into student success, less work has been undertaken to understand how such assessments might be incorporated into institutional practice. We hope this report has shed light on how assessment results informed practice at three HSIs with varying contexts, structures, and approaches to supporting students.

Admittedly, this report is just one perspective on how noncognitive assessments and results might inform and improve institutional practice. Here, we have relied on the viewpoints of faculty, staff, and administrators as evidence of the changes that took place, and that evidence is not without fault. The theory of action provided in Figure 2 is a valuable framework that could guide a variety of quantitative and qualitative research. More structured surveys, observations, or interviews related to faculty, staff, and student experiences could test the extent to which the quantity and quality of elements within the theory of action take place. Given the novelty of this work, however, we feel that this report advances our collective understanding of noncognitive assessment use and sets the stage for important future work.

Certainly, as with any new effort, challenges of buy in, training, and use presented themselves, yet each institution saw sufficient value in the ability to better understand student strengths and challenges to continue assessment efforts after the conclusion of this project. As their work and the work of others continue, we look forward to improved understanding of noncognitive skills and a relevance to student success efforts that can support HSIs and the students they serve.

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Appendix. Process Survey for Participating Institutions

1. **What was the institutional context (problem, challenge, and goal) that led to your participation in this project?** Examples include student success rates, seeking to change developmental education, revamping advising model, state/accreditation push.

2. **What appealed to you about working with noncognitive skills?**

3. **In what way was SuccessNavigator integrated into your institution?** What areas or individuals were involved in the adoption process? How was buy in/engagement fostered?

4. **How was SuccessNavigator used**? Please describe both the administration and use (i.e., score reports, data).

5. **What role did ETS play?** What types of training were provided? Who was engaged in these trainings? What other support was helpful? What support was missing?

6. **What changes took place on campus?** What structural, procedural, or policy changes were made to integrate SuccessNavigator results?

7. **What results were evident?**
    a. How did this affect students' awareness of their own skills, strategies, etc.?
    b. How did this affect advisor/faculty/staff awareness of students?
    c. Did this improve students' willingness to access to resources?
    d. Did this improve various offices, programs' awareness of students' needs?
    e. Were there tangible improvements in student outcomes (e.g., placement rates, course passing rates, % of students on probation, retention, persistence, graduation, GPA)?

8. **What are the next steps/future directions for this work?**
    a. Will this work continue?
    b. Will it be grown or expanded?
    c. What changes will be made to the process?
    d. What additional support is needed?
    e. What other impacts/results might be interesting to examine?