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iPASS in Practice: Four Case Studies

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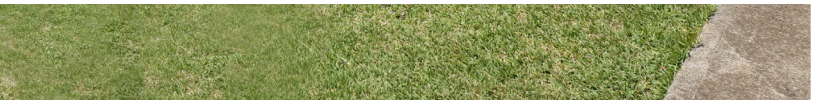

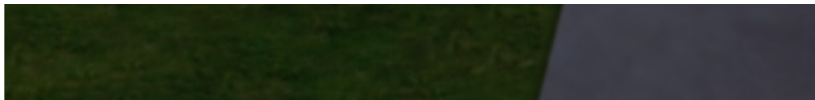

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CCRC is the leading independent authority on two-year colleges in the United States. We conduct research on the issues affecting community colleges and work with colleges and states to improve student success and institutional performance.

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Conceived as an initiative in 2004 by Lumina Foundation and seven founding partner organizations, Achieving the Dream now leads the most comprehensive non-governmental reform movement for student success in higher education history.

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CCRC's Role in Three iPASS Research Projects

The Integrated Planning and Advising for Student Success (iPASS) initiative—which has provided up to $225,000 to each of 26 colleges to help them adopt technologies for improving education planning, advising, and student risk targeting and intervention by 2018—was launched in 2015 with funding from the Bill & Melinda Gates Foundation and The Helmsley Charitable Trust. It followed on the heels of a similar initiative, undertaken from 2012 to 2015 at 19 colleges, in which several lessons were learned:

- Emerging technologies have the potential to allow students to create and follow academic plans effectively, receiving support when they struggle.
- Technology alone is not enough to achieve project goals. Deep changes in institutional structures, systems, and attitudes are required.
- High-quality advising and student support may be facilitated through a set of core SSIPP principles, which call for advising to be sustained, strategic, integrated, proactive, and personalized.

CCRC has been involved in both initiatives. Under the more recent initiative, EDUCAUSE and Achieving the Dream (ATD) have provided implementation services in the form of technical assistance to iPASS grantee colleges, while CCRC has conducted research on college activities and the student experience. All three organizations—EDUCAUSE, ATD, and CCRC—have sought to learn whether the reform of advising and student supports—made possible through the use of technology—provides students with a more seamless and holistic advising experience and ultimately improves student outcomes.

As an evaluator and thought partner in the 2015-2018 iPASS initiative, CCRC has been engaged in three related research projects, which have resulted in reports, presentations, blogs, tools, and other resources for the field.

Project 1. Measuring trends in development and scaling: CCRC has analyzed progress in implementation and student outcomes during the grant period across all 26 participating colleges. Resulting reports include a survey of technology use and advising practices provided to the colleges, a baseline report of key performance indicators (KPIs) (Armijo & Velasco, 2018), and a final report of trends in the KPIs after two years of project implementation (Velasco & Hughes, forthcoming).

Project 2. Understanding implementation: CCRC has studied implementation processes at nine colleges, some of which emphasized advising in STEM pathways. We conducted a review of the literature (Fletcher, Grant, Ramos, & Karp, 2016), reported on the use of predictive analytics (Klempin, Grant, & Ramos, 2018), released a set of case studies of four iPASS colleges (current report), and studied how iPASS reform has unfolded at different levels of the college ecosystem (underway). We also wrote an invited chapter on the SSIPP principles in practice (Klempin, Kalamkarian, Pellegrino, & Barnett, 2019).

Project 3. Evaluating enhanced advising at three colleges: In collaboration with MDRC, CCRC has conducted research at three colleges that were provided technical assistance as they developed enhanced iPASS advising systems targeted to specific student populations. We partnered in an evaluation that included a randomized controlled trial and qualitative fieldwork to understand implementation at each college. This resulted in a report on the project designs developed at each college (Kalamkarian, Boynton, & Lopez, 2018), an interim report on early outcomes (Mayer et al., 2019), a report on implementation (underway), and a final report on outcomes (planned).

Introduction

Scholars and practitioners have long made connections between good academic advising and postsecondary student success (Afshar & Dhiman, 2008; DeLaRosby, 2017; Drake, 2011; Sommo, Cullinan, Manno, Blake, & Alonzo, 2018; Tinto, 2006). However, at many colleges, advising and student supports do not live up to their potential in helping students persist and achieve their education goals. At two- and four-year institutions combined, 30 percent of students drop out before completing a certificate or degree (Shapiro et al., 2018), and many do not know where to turn when they are struggling (Karabenick & Knapp, 1988). Advisors and others providing support are highly committed to student success, but they have trouble meeting the complex needs of the many students assigned to them (Swecker, Fifolt, & Searby, 2013). A large part of the difficulty stems from resource constraints. Public colleges continue to serve students who face multiple challenges, yet state and local funding has declined over the long term (Weber, 2018).

The iPASS initiative provided three years of financial, technical, and change management support to 26 institutions as they redesigned their advising processes and adopted and implemented new technologies.

Encouragingly, a range of efforts are underway to improve the effectiveness and efficiency of advising and student supports. Among these is the Integrated Planning and Advising for Student Success (iPASS) initiative.[1] Launched in 2015 with support from the Bill & Melinda Gates Foundation and The Leona M. and Harry B. Helmsley Charitable Trust, the initiative provided three years of financial, technical, and change management support to 26 two- and four-year institutions as they redesigned their advising processes and adopted and implemented new technologies. The project, led by Achieving the Dream (ATD) in partnership with EDUCAUSE focused on three major areas:

- **Redesigning advising systems to reflect the growing evidence base on ways to improve student experiences and outcomes.** Participating colleges sought to align their advising and support services with the SSIPP framework, which calls for supports that are sustained, strategic, integrated, proactive, and personalized (Kalamkarian, Boynton, & Lopez, 2018; Karp & Stacey, 2013).
- **Incorporating a range of technologies to improve education planning, communication with students, case management, and targeting support to students in need of help.** The increased and thoughtful use of new technologies was intended to make better use of limited staff and financial resources to provide timely, well-conceived support to students (Karp, Kalamkarian, Klempin, & Fletcher, 2016).
- **Managing the process of institutional reform in an effective manner, using evidence-based change management approaches** (Achieving the Dream, 2018).

Over the three years of the grant, ATD and EDUCAUSE provided strategic assistance to help institutions leverage both technology and human relationships to undertake a fully scaled redesign of their advising and other student support services. Concurrently, the Community College Research Center (CCRC) conducted a series of qualitative and quantitative research studies to understand how institutions approached their redesign and how this work affected students. The resulting CCRC reports describe the

experiences of participating colleges, including their successes, challenges, and lessons learned. In addition, CCRC documented changes in institutional outcomes over time and, with MDRC,[2] conducted a randomized controlled trial with three colleges to rigorously assess the effectiveness of an enhanced form of the iPASS approach.[3]

Based on our experience with the iPASS initiative, it is clear that colleges need more information on what good advising looks like for students and how technology can support advisors and administrators in designing and delivering a high-quality advising experience for all students. In this report, we share the stories of the four community colleges that received funding from The Helmsley Charitable Trust to participate in the iPASS initiative. Each offers a unique example of how a community college chose to implement the iPASS approach, along with discussion of the main elements of its advising redesign and its experiences with technology integration. After presenting individual case studies of the four colleges, we highlight cross-case lessons, which may be useful to college administrators, student services leaders, and advisors who are planning or implementing an advising redesign. As these stories illustrate, the advising redesign process is iterative, collaborative, and challenging, calling for multiple stakeholder groups across an institution to break down silos and work together to improve student outcomes.

The advising redesign process is iterative, collaborative, and challenging, calling for multiple stakeholder groups across an institution to break down silos and work together to improve student outcomes.

Trident Technical College

Advising Redesign With an Emphasis on Student Onboarding

Motivation for Advising Redesign

During a yearlong planning process to develop strategies for increasing student retention and completion at Trident Technical College, college leaders identified advising as a crucial area for improvement. At that time, the college did not have professional advisors. New students received initial assistance from orientation staff who provided general information about the college, explained how to fulfill key early needs (such as obtaining a student ID and registering for courses), asked students to watch an informational video about the college, and answered questions. While this approach to orientation provided critical information, it primarily covered general logistical aspects of students' college experience without introducing students to the college's advising system or giving them the chance to explore their educational or career interests.

KEY FACTS ABOUT TRIDENT

Location: Charleston, South Carolina

Student population: 10,905

Student race/ethnicity:

Asian: 2%
Black: 30%
Hispanic: 6%
White: 56%
Two or more races: 3%

Students receiving Pell grants: 41%

Three-year graduation rate: 13%

Source: College Scorecard website (U.S. Department of Education, July 2019).

Beyond orientation, Trident's advising system relied on faculty advisors who were assigned students based on major. Students who had declared a major when they applied were given contact information for their assigned faculty advisor during orientation, while students who had not declared a major were referred to career counseling services and only assigned a faculty advisor after selecting a major. Because students were able to self-register for courses after the first term, however, there was little incentive for them to meet with their faculty advisors. In addition, students often found it difficult to schedule an appointment with their assigned faculty advisors given the advisors' heavy teaching loads. Consequently, some faculty advisors reported meeting with 30 percent or fewer of their assigned students during any given term.

Redesign Strategies: Advising Reforms

In order to more meaningfully engage students early on and provide more sustained support, Trident transformed its orientation center into a one-stop advising center called the Hub. In addition, the college expanded the role of orientation staff to include a greater emphasis on advising and guiding new students, signified by a new title, navigator. A major component of the college's advising redesign involved training the existing orientation staff to become navigators and hiring several new staff to take on

this role. The Hub was initially staffed by four full-time and three part-time former orientation leaders as well as a new Hub director. Currently, staffing for the Hub includes 11 navigators, a Hub director, an assistant Hub director, four part-time Hub leaders, and three to four work-study students.

Navigators are primarily charged with helping students clarify their goals and access college resources. In addition to conducting orientation sessions, they create education plans with students, provide coaching and career counseling, and respond to early alerts from faculty members. Navigators specialize in specific programs of study but can assist any student if necessary. They receive an advising syllabus containing information about theories of advising practice and how to establish learning objectives for advising sessions.

Within 36 hours of applying to Trident, students are assigned a navigator and receive an email with the navigator's contact information as well as directions for logging into the college's technology system for onboarding and education planning. The message also encourages them to visit the Hub for an orientation session. During this redesigned orientation event, Hub staff assist students with enrolling in the college, teach them how to use the education planning tool, and help them complete an education plan, either one-on-one or in small groups. During the redesign, Trident further enhanced the onboarding process by incorporating some of the information contained in the old orientation in a just-in-time manner via the new education planning tool.

ADVISING & TECHNOLOGY AT TRIDENT

Assigned advising: Yes

Advising model: Split (shared between professional and faculty advisors)

Key advising roles:

- Professional advisors (navigators) assigned as soon as students are accepted
- Faculty advisors assigned after students meet established milestones, based on program of study or intended transfer institution

Average caseload:

- Navigators: 800 students
- Faculty advisors: 100–300 students

Primary technology for the redesign: multifunction system

Primary technology's main functions:

- Student-facing onboarding and education planning
- Real-time registration directly from education planning tool
- Faculty- and staff-facing communication and case management for monitoring students' progress

Additionally, in order to provide more prolonged onboarding support, leaders of the advising redesign and academic faculty developed a three-credit first-year experience seminar introducing students to Trident. The course is designed to help students learn how to access support services on campus, improve their academic skills, and understand the value of a liberal arts and sciences education. The course also helps ensure that students are comfortable using the technology systems that they will need to use throughout their time at Trident. Although the course is not required, students are strongly encouraged to take it.

By delegating the onboarding process to the navigators, faculty advisors are able to spend more time helping students explore individual educational and career interests. Partly to alleviate some of the capacity constraints imposed by faculty workloads, students intending to transfer who are enrolled in Associate in Arts (AA) or Associate in Science

(AS) degree programs (over half of the student body) generally remain with the same navigator until they have completed 30 credits, at which point they transition to their faculty advisor. Students enrolled in career and technical programs typically begin meeting with their assigned faculty advisor sooner, as these programs are smaller and have historically had faculty members that are highly involved in advising, compared to other programs.

Given the emphasis on program-specific advising at Trident, another key component of the college's advising redesign was the development of *transition protocols* establishing criteria for determining when students should switch from meeting with a navigator to meeting with their faculty advisor. The transition protocols also outline key program facts to ensure that navigators are equipped with accurate program-specific information. To allay initial concerns among some faculty members about giving navigators more advising responsibilities, each academic division had the opportunity to create its own transition protocol. To further enhance communication between academic affairs and student services, the navigators and the leaders of the advising redesign spent extensive time meeting and talking with faculty members to ensure that their needs were being met.

Redesign Strategies: Leveraging Technology

In the past, students' education planning at Trident happened unsystematically; it was done using paper and pencil but without formal record keeping. In order to improve the student experience, the advising redesign team selected an interactive education planning tool that students, navigators, and faculty advisors can use to map out an education plan, as well as to explore future career options. The tool includes a function that identifies programs and careers aligned with students' interests and recommends majors that may be a good fit. In addition, navigators and faculty advisors can monitor students' progress and recommend changes that students can then accept or decline. Use of this tool is not mandatory, but it does make it easier for students to register for courses, enabling them to register directly from their education plan rather than having to log into a separate system and reenter course information.

Further, the technology serves as a case management tool and incorporates several useful functions. Notably, it allows students to schedule advising appointments online and advisors to run communication campaigns to encourage targeted groups of students to schedule an advising appointment. In addition, the tool includes a platform for collecting and storing advising notes.

Finally, the college is developing plans to launch an early alert tool. They intend to pilot the tool first with one or two types of alerts (e.g., attendance) before implementing it at scale in order to ensure that they are developing viable and sustainable processes that work well for advisors and are beneficial to students.

Leadership Team

Formal leadership of Trident's advising redesign is shared by the vice president of academics and the vice president of student services. While the vice presidents provide

insight into high-level administrative priorities, day-to-day management of the work is carried out by a core leadership team led by an academic dean who serves as the project director. Additional members of the core leadership team include a student services dean, the Hub director, a member of the IT department, and a navigator. Demonstrating a commitment to promoting open communication with the college community, the core leadership team undertook a communication tour during the early stages of the redesign and attended as many faculty and staff meetings as possible to explain project goals, foster buy-in and engagement, and provide regular updates on progress and changes. The president's cabinet serves in an advisory capacity and has also assumed a vital role in communicating the importance of the work to the rest of the college.

Recognizing the need for more support for the technology components of the redesign, Trident formed a separate technical team at the beginning of the grant to oversee the implementation and adoption of new technologies. The technical team includes several members of the leadership team as well as the director of institutional research and another member of the IT department.

Now that the college has moved past the initial implementation phases of its advising and technology reforms, it is reassessing who should be involved in the long-term oversight of the work.

MAIN ACTIVITIES AT TRIDENT

Year 1:

- Assembled team to identify technology needs and select software
- Purchased and implemented education planning technology
- Created new position of Hub director
- Hired a new navigator and started training orientation staff to become navigators
- Made multiple presentations to faculty

Year 2:

- Opened the Hub
- Hired three new navigators and a director of the Hub
- Piloted Hub orientation sessions and the education planning tool
- Solicited student feedback on the education planning tool and on experiences at the Hub
- Launched a faculty and staff side of the education planning tool for case management
- Began training faculty advisors on the use of technology
- Developed new first-year experience course

Year 3:

- Expanded the number of programs using the Hub and education planning tool with plans to scale to all programs by the end of the year
- Developed transition protocols and advising syllabi
- Began planning to acquire an early alert tool

Successes

An improved advising structure. The development of the Hub and the introduction of navigators not only resulted in a more systematic and comprehensive onboarding process for new students, but also created a more supportive campus culture by providing a central location with designated contacts who are easily accessible to students.

Open and transparent communication. The leadership team's commitment to open and transparent communication was evident in their frequent attendance at staff and faculty meetings and in regular updates sent out to the campus regarding progress with the reforms. This emphasis on communication was crucial for gaining buy-in and support for the work.

Collaboration between academic affairs and student services. The leadership team took several steps to address initial faculty concerns about the role of navigators, including meeting with academic divisions on campus individually, inviting faculty to observe orientation sessions at the Hub, and creating transition protocols specifying criteria for when students should switch from meeting with a navigator to meeting with their faculty advisor. These efforts were welcomed by faculty, many of whom began to actively collaborate with the Hub. For example, faculty members now volunteer to be on call during certain times to field program-specific questions from navigators.

Challenges

Complicated technology implementation. Working through state requirements designed to ensure a fair and competitive technology procurement process delayed the initial technology purchase by several weeks. After the technology had been purchased, the college encountered additional delays related to integrating the new technology system with their existing Student Information System (SIS). Because the new technology needed access to data in the SIS, the SIS vendor asked the vendor of the new technology to sign a nondisclosure agreement. As a result of these unexpected complications, rollout of the new system was pushed back by a full semester.

Lack of clarity around the navigator role. Particularly during the early stages of the redesign, stakeholders did not fully understand how the new navigator role differed from the previous role of orientation leader. They were also uncertain about whether an enhanced role for navigators would detract from the faculty advising role, and they expressed concerns that navigators lacked sufficient content knowledge about the programs of study for which they were advising. As described above, however, the leadership team's dedication to improving communication and partnering with faculty advisors gradually allayed these concerns.

Limited student use of education planning tool. Although the college conducted extensive outreach over email and phone to encourage new students to use the education planning tool, take-up has been less than hoped. By the end of the third year of the redesign efforts, 40 percent of students had used the tool. This low percentage is partially due to the difficulty associated with getting students to respond to outreach and partially due to the fact that the tool was rolled out to selected programs over the course of three years as a means of pilot testing the tool before implementing it for the entire institution. Additionally, faculty members for some of the smaller programs who begin advising their students immediately upon enrollment tend to identify appropriate required courses by referring to the course catalog rather than having students complete an education plan using the planning tool. Now that the tool has been scaled to all programs, the college believes it will be easier to conduct campus-wide marketing campaigns to promote the tool.

Zane State College

Advising Redesign in the Context of Guided Pathways

Motivation for Advising Redesign

Leaders at Zane State credit the college's longstanding involvement with Achieving the Dream, which it has been part of since 2005, for its focus on using data to drive student success efforts. This work led the college to acknowledge the importance of early student engagement and clear academic program paths as key elements for increasing student success. College leaders realized that making progress toward improving engagement and pathway planning would require major changes to the college's disconnected and inconsistent advising processes. These processes were resulting in vastly different advising experiences for students placed in developmental and college-level courses and were largely dependent on students taking the initiative to seek out advising services. After the college began experiencing declines in persistence rates several years ago, redesigning advising processes to improve student success became a more urgent task.

KEY FACTS ABOUT ZANE STATE

Location: Zanesville, Ohio

Student population: 1,110

Student race/ethnicity:

- Asian: 1%
- Black: 3%
- Hispanic: 1%
- White: 90%
- Two or more races: 3%

Students receiving Pell grants: 22%

Three-year graduation rate: 33%

Source: College Scorecard website (U.S. Department of Education, July 2019).

Redesign Strategies: Advising Reforms

From a change management perspective, Zane State felt it was crucial to be able to tie its advising redesign into a coherent student success strategy. It achieved this objective by nesting the advising redesign within the broader framework of guided pathways reforms already underway at the college. The guided pathways model calls for colleges to "fundamentally redesign their programs and support services in ways that create clearer, more educationally coherent pathways to credentials that in turn prepare students for success in the workforce and further education" (Jenkins, Lahr, Fink, & Ganga, 2018, p. 1). Key elements of the guided pathways approach include helping students select and enter a program of study, creating program maps that outline program-specific standard course sequences that can be customized to develop individual student education plans, providing support to keep students on their path, and ensuring that students are learning (Jenkins et al., 2018).

Informed by the guided pathways model, Zane State's advising redesign centered on helping students select and enter a program of study and stay on track. A key component of the redesign involved changing the roles of both professional and faculty advisors. In the past, professional advisors primarily worked with new

students and students who had not yet declared a major. They also continued to work with students who wanted assistance on an as-needed, drop-in basis. Students began working with a faculty advisor only after declaring a major and starting courses in their chosen program of study. This meant that students placed in developmental education, as well as those planning to apply to selective admissions programs, were not connected to a faculty advisor until later in their college career. Overall, the college considered the relationship between professional and faculty advisors to be limited to the "hand off" that occurred when students transitioned from working with a professional advisor to working with a faculty advisor.

As part of the redesign, professional advisors became known as success coaches, signifying a greater emphasis on counseling and case management. In addition to continuing to work with students who are undecided on a program of study, success coaches are assigned to students within specific programs of study who have been identified as at-risk based on information from sources such as early alerts. This not only allows the success coaches to develop expertise within specific program areas, but also gives success coaches a formal case management role, providing ongoing support to the students who most need it.

ADVISING & TECHNOLOGY AT ZANE STATE

Assigned advising: Yes

Advising model: Split (shared between professional and faculty advisors)

Key advising roles:

- Professional advisors (success coaches) assigned to undeclared students, students in developmental education, and at-risk students based on intended meta-major
- Faculty advisors assigned based on intended program of study

Average caseload:

- Professional advisors: varies widely
- Faculty advisors: 25–50 students

Primary technology for the redesign: multifunction system

Primary technology's main functions:

- Education planning
- Early alerts
- Predictive analytics

Furthermore, under the new advising model, faculty advisors begin working with all new students from the time of orientation and are assigned based on the students' likely major, regardless of whether students have declared their major or started taking program courses. By immediately assigning all new students with an interest in a specific program to a faculty advisor, the college is hoping "to get . . . the students right from the get-go associated with their program advisor and the instructors so that they are comfortable with them and they go to them automatically," according to one of the core members of the team implementing the advising redesign. To support faculty members in this more intensive advising role, a team of student services staff members and faculty developed an advising syllabus that specifies student learning outcomes for advising, helping to encourage a case management approach.

As a result of these changes, all new students receive initial support from a success coach and a faculty advisor, with ongoing support for all students from faculty advisors and additional ongoing support from success coaches for the students who could benefit from extra support. In contrast to the hand off, stakeholders now view

the relationship between success coaches and faculty advisors as a joint venture with both working as a unified front to support students.

Finally, as an additional means of providing proactive support, Zane State restructured its first-year experience course, which students take during their first semester, to support early student engagement with faculty advisors and long-term education planning. One of the assignments for the course is a required meeting with their program faculty advisor to complete the education plan that each student started at orientation so that it carries all the way through to graduation. At that meeting, students also register for the following semester in an effort to boost persistence and completion.

Redesign Strategies: Leveraging Technology

To enhance the ability of success coaches and faculty advisors to provide case management, Zane State intentionally incorporated several technologies into its advising reforms to improve communication between success coaches and faculty advisors, to promote long-term education planning and early identification of students who are struggling, and to develop systematic processes for connecting students with support services. These technologies include tools that support education planning, early alerts from faculty concerned about student progress in courses, and predictive analytics to target interventions to students most at-risk.

Aligned with guided pathways efforts to clarify students' education plans, Zane State launched an electronic education planning tool for use by students and their faculty advisors. The new tool not only provides an interactive online platform for mapping out education pathways, but also includes advanced features such as the capacity to register for courses directly from the plan and a function that prevents students from registering for courses that are not on the plan without their advisor's approval.

When Zane State began to implement the education planning tool, faculty reevaluated optimal routes for progressing through programs of study. In preparation for launching the tool, faculty in each department were charged with creating default program maps with a standard set of recommended courses to serve as starting points for developing individual plans, an essential

MAIN ACTIVITIES AT ZANE STATE

Year 1:

- Purchased and implemented education planning and early alert technologies
- Adopted Franklin Covey's Four Disciplines of Execution (4DX) as a framework for managing change

Year 2:

- Helped professional advisors assume a case management role in their new position as success coaches
- Launched education planning tool after addressing glitches with technology vendor
- Launched early alert tool institution-wide
- Tested and refined predictive analytics model
- Held a faculty start meeting with all new first-time students to create an academic plan using the new education planning tool

Year 3:

- Redesigned first-year experience course
- Developed advising syllabus for faculty specifying student learning outcomes
- Decided to abandon education planning tool and early alert system and pursue software solutions that better met the needs of the college

practice for helping students enter and remain on a path according to the guided pathways model (Jenkins et al., 2018).

In Zane State's previous system, early alert referrals from faculty members to professional advisors were paper-based. In implementing new technologies, project leaders worked closely with faculty to develop guidelines to optimize the use of the early alert tool; the guidelines deal with matters such as appropriate timing of alerts, the types of issues faculty should address directly with students, and the types of issues that warrant referral to the success coaches. Furthermore, the note-taking feature of the early alert tool is viewed as a key mechanism for increasing communication between success coaches and faculty advisors and for supporting a more integrated approach to advising.

With regard to the predictive analytics tool, the implementation team struggled to develop a model that could accurately forecast student outcomes. The standard model originally proposed by the vendor was accurate in predicting outcomes for Zane State students only 50 percent of the time based on tests conducted with historical data, causing widespread skepticism about its value.

Unfortunately, a number of technology challenges (highlighted in the challenges section below) prevented Zane State from being able to successfully adopt all three tools (education planning, early alerts, and predictive analytics) institution-wide and ultimately led to the termination of the contract with the vendor. Technology setbacks notwithstanding, the college learned a great deal about the value and limitations of these tools and about its own internal systems and procedures through the implementation process. These lessons are currently being considered in discussions about how to move forward with new technologies to support the goals of the advising redesign.

Leadership Team

Zane State deliberately assembled a diverse leadership team with representation from across the institution. The core team consisted of two student services leaders, one academic administrator, and the head of the joint institutional technology and institutional effectiveness department. The core team was supported by a larger team consisting of a success coach; deans and faculty members; and representatives from the registrar's office, financial aid office, and TRIO.[4]

The college president provided high-level support to the advising redesign efforts, articulating the vision, promoting and supporting culture change, and empowering mid-level leaders to steer the efforts on the ground. The student services and academic leads had much more direct roles in ensuring that the success coaches and faculty members were both kept up-to-date on the redesign and provided with the training and support they needed to embrace and enact the reforms.

To actualize the college's vision for its advising redesign, Zane State's leaders adopted the change management principles of Franklin Covey's Four Disciplines of Execution (4DX)[5] as a means of identifying and tracking clear, measurable intermediate and long-term outcomes and assigning ownership of those outcomes

to specific individuals. Following the 4DX model, the college first identified several "wildly important goals" related to retention and completion and then formed work groups dedicated to specific strategies for reaching those goals, such as increasing engagement among new students at the beginning of their first semester. Each work group then set intermediate targets (lead measures) to continually assess progress toward achieving long-term outcomes (lag measures). An administrator closely involved in the advising redesign commented that 4DX increased investment in reforms by encouraging stakeholders to ask, "What can I do in the near term and present that leads to . . . the college being successful at this next realm?" Similarly, a faculty advisor reported that 4DX had improved communication and buy-in for the advising redesign because "we are seeing our results, and it's like, 'Oh wow, the light bulbs are going off all over campus.'"

Successes

Buy-in despite challenges. By consistently communicating the importance of new initiatives, describing the intended benefits, and explaining how each contributes to the larger goal of creating a coordinated network of student supports, project leaders were able to overcome challenges associated with initiative fatigue and generate widespread buy-in.

Improved advising processes aligned with guided pathways. Transitioning professional advisors to success coaches, developing new processes for assigning students to coaches, establishing expectations for early faculty advisor engagement, and developing a new early alert system all represent significant changes at the college resulting in a more consistent and holistic advising experience for students. Additionally, introduction of the education planning tool facilitated long-term planning focused on helping students complete a credential and prepare for further education or a career.

Strong foundation in change management. The college is currently in its third year of using the 4DX framework to organize work groups around data-driven goals and to sustain a culture focused on student success. Describing the significance of the 4DX model in the annual report submitted at the end of the iPASS grant, project leaders indicated that they view 4DX as an important method for sustaining their advising work over time and noted that 4DX "provided a vehicle for change management" that was enabling the college to transform the principles of the advising redesign "into a new and lasting campus culture."

Challenges

Staff turnover and resistance to change. The departure of people in several key positions during the implementation process along with staff reductions due to budget constraints sometimes left the remaining staff feeling as though implementation teams were fragmented, making it challenging to complete tasks on time. Staff turnover also may have made it more difficult to recognize and address the root causes of resistance to change or initiative fatigue, as it was unclear whether people merely needed time

to adjust to leadership changes or whether they harbored concerns about the advising redesign itself.

Technology problems. Technology issues with the education planning tool created substantial delays. These issues included both technical problems, such as features not working properly, and functionality challenges, such as the inability to add elective courses to education plans. As a small college with little experience navigating vendor contracts and launching multiple complex technologies simultaneously, Zane State had a difficult time managing the technical problems they encountered. In addition, the amount of extra staff time needed for addressing these issues became cost-prohibitive, leading the college to decide to end the vendor contract.

Capacity and role concerns among professional advisors. A study participant mentioned concerns that the switch to assigned caseloads for the success coaches would create capacity issues given the small number of staff, the fact that most of the success coaches were not advising full-time, and the new expectations that they would provide more intensive support. Further, although the success coaches with whom we spoke were enthusiastic about their new role, they did express some trepidation about their ability to enact holistic advising practices and wanted more professional development.

Honolulu Community College

Advising Redesign in the Context of a System-Wide Student Success Initiative

Motivation for Advising Redesign

In recent years, the University of Hawai'i system (UH) has made student success and completion a priority at all of its two-year and four-year institutions. As part of this effort, UH launched the Hawai'i Graduation Initiative aimed at increasing completion rates among students.[6] To support this initiative, as well as its participation in Achieving the Dream and a 15 to Finish campaign[7] it was undertaking, UH began to focus on advising reform that would include, among other changes, technology improvements and additions to personnel. In 2015, the system launched a pilot program to redesign advising services at Honolulu Community College (HCC), one of seven community colleges in the system.

The college's vision was to align the advising redesign project with the college mantra of being "student centered, student focused," calling for administrators, faculty, and staff to put student success and retention at the forefront of their work. This broad vision demanded that support structures and processes change across the institution, not just in academic counseling.

When asked about the goals associated with this work, an administrator said, "It's really about how we not just integrate the technology, but how we integrate the campus to create networks that are going to support the students across the entire pathway to completion."

KEY FACTS ABOUT HCC

Location: Honolulu, Hawai'i

Student population: 2,790

Student race/ethnicity:

Asian: 43%
Black: 2%
Hispanic: 10%
Native Hawaiian / Pacific Islander: 7%
White: 7%
Two or more races: 28%

Students receiving Pell grants: 21%

Three-year graduation rate: 17%

Source: College Scorecard website (U.S. Department of Education, July 2019).

Redesign Strategies: Advising Reforms

Prior to the advising redesign, the student support structure at HCC was conceptualized in terms of two distinct functions—academic advising (course selection and education planning) provided by program counselors and supplemental academic and nonacademic support provided through the College Achievement and Retention (CARE) Center. Though the primary functions of these roles did not change drastically in the redesign, HCC hoped that the addition of technological functions would support an integrative approach to supporting students and help break down existing silos in these areas.

Academic advising is provided by program counselors (classified as non-instructional faculty) who are located in the academic counseling office. However, students are not formally assigned to these counselors. Program counselors are organized by program and focus on academic issues such as course selection, transfer options, and education planning. Enforced through a registration hold, students are required to see a program counselor in their first term, with the meeting largely focusing on registration and education planning. After the initial meeting, they are no longer required to see a program counselor but are able to access advising services as needed.

The CARE Center is dedicated to addressing any academic or nonacademic barriers to student success. Professional CARE staff members connect students to on- and off-campus support services, help new students navigate the transition to college, provide academic tutoring, refer students to peer mentors, and respond to early alert flags triggered primarily by faculty. Students are assigned to CARE staff randomly (alphabetically by their last name) but the office has an open-door policy and students are welcome to come to the office any time and see any available staff member. In addition to serving continuing students, CARE staff conduct outreach to new and prospective students to assist them in completing their applications, enrolling in courses, and understanding developmental education requirements.

ADVISING & TECHNOLOGY AT HCC

Assigned advising: No

Advising model: Program counselors (non-instructional faculty) and CARE retention staff

Key advising roles for program counselors:

- Focus predominantly on academic counseling
- Begin meeting with students in their first term

Key advising roles for CARE (College Achievement Retention Experience) staff members:

- Focus largely on nonacademic issues
- Open-door policy for drop-in appointments
- Work with new and prospective students as well as continuing students

Primary technology for the redesign:

- System 1: Multi-function academic planning and administration system
- System 2: Multi-function student support system

System 1's main functions:

- Education planning
- Course scheduling
- Registration

System 2's main functions:

- Early alerts
- Case management
- Predictive analytics

Another critical component of the advising redesign work at HCC was to increase faculty participation in providing student support beyond submitting early alert flags. In year two of the grant, the college launched several pilot activities to facilitate faculty-to-student mentoring. After reviewing the results of these activities, the college chose two programs of study to scale the mentoring program. Faculty in the chosen programs of study committed to meeting with every student once per semester in a mentoring meeting and utilizing the case management tool to record notes and talk with students about their academic performance. Although they had received some professional development, faculty expressed a need for additional training on the technology tools and additional guidance on how to conduct the mentoring meetings. In addition to program-level mentoring efforts, two faculty members were piloting classroom-based activities designed to help students feel more connected to their peers, their instructors, and the

college. According to course survey results, students responded positively to those efforts and reported more feelings of connectedness.

Redesign Strategies: Leveraging Technology

In the past, HCC used separate technology tools for student record data, advising and early alerts, course scheduling, and education planning. To complement the advising and student support redesign work described above, the college embarked on a technology infrastructure overhaul. This reduced the number of systems used by advisors and faculty from four to two. The college consolidated some software and added functionality to existing systems. Under the new model, one system was dedicated to course scheduling, education planning, and registration, and the other was dedicated to case notes, early alerts, risk assessment based on predictive analytics, and allowing students to schedule advising appointments.

Integral to the advising redesign at HCC was the use of a specialized education planning tool that enabled both CARE staff and program counselors to create plans for students who are at risk or struggling. During year one of the grant, the education planning tool was used by both groups of counselors to develop plans for students who had a high to medium risk score based on predictive analytics and to email the plans to students. However, the predictive analytics software at the time was generating risk scores based on older data and was not considered a reliable resource for enacting an intervention.[8] Further, students were not active participants in developing the plans. During year two, the planning tool was used similarly for students taking developmental courses—again, without the student's direct involvement. By year three, program counselors and students who were on probation or in transfer programs were collaboratively developing plans through the software. Early reactions from program counselors and students suggest that student involvement in education planning is beneficial.

In addition, faculty began using early alerts to provide a broader range of feedback to students, both to alert students of issues with performance and to provide positive feedback when students performed well. Faculty use of early alerts was light early on but increased over time. There are several possible reasons for the increase in use. For

MAIN ACTIVITIES AT HCC

Year 1:

- Established steering committee
- Worked with the UH System to identify ways to optimize technology for new advising and supports approach
- Completed technical integration of predictive analytics and case management software
- Clarified staff roles in retention strategies
- Developed success plans for students with high-medium risk score

Year 2:

- Hired a project manager
- Created success plans for students in developmental courses
- Utilized data to understand impacts and garner stakeholder buy-in
- Launched faculty mentoring pilot

Year 3:

- Continued piloting activities to increase faculty mentoring
- Created success plans for students on probation or those who plan to transfer
- Decided to change predictive analytics software
- Increased faculty use of early alerts by 77 percent, particularly for positive feedback

one, the college supplied division chairs with external, empirical evidence indicating that students appreciate receiving positive feedback through early alert systems. The college also assembled a group of faculty to examine the early alert system and the messages used in communicating with students. This group suggested improvements to boost effectiveness with students, such as having the early alert email come from the instructor rather than the CARE staff.

Leadership Team

Because this advising redesign was carried out through both the UH system office and HCC, the core leadership team for the work consisted of individuals from both levels. The vice chancellor of academic affairs served as the representative from HCC, while the system office leaders included the vice president for academic affairs, the vice president of information technology, and the director of institutional research. This core leadership team worked together on implementing the advising redesign, particularly the technology acquisition and consolidation.

In addition, HCC established a steering committee in 2015 that was responsible for day-to-day issues associated with implementation. The team consisted of the key personnel involved in the project: technical leads (for software integration and support), functional leads (to support faculty, program counselors, and CARE staff), and leaders in academic and support services. Early on, the team met every other week and focused on integrating technology and obtaining more accurate student success and retention data. However, the committee was not poised to manage the day-to-day operations of the work. By 2017, the college had hired a project manager who was able to direct focused attention on the work and allowed the college to move forward more quickly with implementation. The project manager also worked to increase usage of the education planning tool and to liaise between student services and academic affairs in relation to utilizing the software products.

Successes

Centralization of leadership for the project. The hiring of the project manager was pivotal in terms of moving the project forward. The project manager closely analyzed existing record keeping practices among counselors and worked with them to identify the essential data needed to understand advising session trends and content.

Ongoing, strategic use of data. HCC found that thoughtfully using data was important to the work, both to inform adjustments and to assess outcomes. For instance, project leaders found that students who received an early alert and had two-way interactions with a counselor were more than twice as likely as students who did not have both of these types of interactions to pass a course with a C or higher. They also found that students on probation who developed a plan with counselors persisted into the next semester at nearly twice the rate of students on probation who did not do so.

Responsive and effective leadership. The responsiveness of project leaders to the concerns of HCC staff around predictive analytics and early alerts indicated that they were attuned to the priorities and needs of stakeholders. In addition, college

administrators indicated that the work helped foster collaboration across departments and break down silos at the college—a key goal of the redesign work.

Adoption of case management tools by CARE staff and program counselors. Though more work is needed to garner support for the changes underway among faculty, program counselors and CARE staff have fully adopted the case management software system. They regularly use it to house notes, create student education plans, and make referrals to one another.

Challenges

Technology problems. The institution experienced some challenges with technology, particularly with the use of predictive analytics and early alerts. In particular, the algorithm used to assign risk scores was believed by HCC staff to be problematic, as scores were assigned using fixed data about a student that they could not change. iPASS leaders at HCC responded to these concerns and began working with the predictive analytics vendor to design a new approach.

Faculty adoption of technology and mentoring. Faculty were reluctant to use the early alert system because they were concerned that sensitive student data might leak to employers or others outside the college and that early alert flags might have a punitive effect on students. They also believed that they were better positioned than CARE staff to provide direct academic help to students. These issues were addressed through trainings and data sharing (particularly about the value of positive feedback), resulting in the increases in usage mentioned above. Through enabling faculty to access more student data and providing training for technology, administrators believed faculty were becoming "more invested in the process" of providing holistic student support.

Personnel shifts and capacity. The college experienced shifts in personnel over the course of the project, which slowed momentum and made it difficult to move the work forward. With the loss of the original leader of the grant project and some additional leadership changes, the work groups struggled to implement the reforms early on. Further, it took over a year to hire a project manager for the work, so the project lacked steady leadership for some time. Much of the planned work remained on hold until that person was hired.

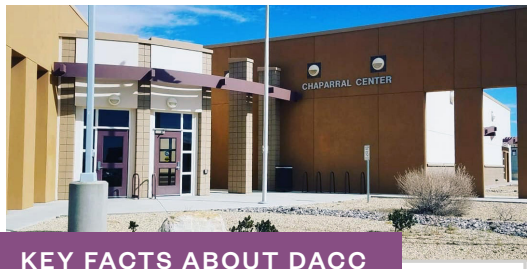
Doña Ana Community College

Advising Redesign With an Emphasis on STEM Pathways

Motivation for Advising Redesign

Doña Ana Community College (DACC) was motivated to join the iPASS initiative in large part to address its lack of centralized information on students. Through the years, advisors had expressed frustration with using different systems to access student grades, financial aid, and other relevant information. Having a dashboard or a one-stop shop with student data and information would provide advisors with easy access during advising appointments.

Moreover, before iPASS, three of the four branch campuses across the New Mexico State University (NMSU) system, including DACC, had expressed interest in introducing early alerts and a system for more proactive outreach to students as strategies for retaining students. Rather than support the efforts of three different campuses, the IT department at NMSU decided to integrate the three campuses' technologies into one comprehensive multifunction system to increase student retention and completion.



KEY FACTS ABOUT DACC

Location: Las Cruces, New Mexico

Student population: 5,600

Student race/ethnicity:

- Asian: 1%
- Black: 2%
- Hispanic: 75%
- White: 15%
- Two or more races: 1%

Students receiving Pell grants: 48%

Three-year graduation rate: 14%

Source: College Scorecard website (U.S. Department of Education, July 2019).

Redesign Strategies: Advising Reforms

In addition to improving advising systems generally, DACC's advising redesign efforts centered on encouraging more students to enroll in STEM programs, particularly students from underrepresented backgrounds, in order to prepare students to fill STEM vacancies in New Mexico's job market. To ensure students have the support they need to complete STEM programs, the college now identifies high- and medium-risk STEM students through an evidence-based predictive analytics model, and it uses an academic alert calendar to provide proactive outreach. Advisors are responsible for reaching out on a regular basis to students with fewer than 30 earned credit hours in three programs of study designed to transfer to NMSU bachelor's degrees: Associate of Science, Associate of General Engineering, and Associate of Electronics Technology. In addition, they conduct outreach to students based on other risk conditions (including new students with a high school GPA below 2.75, students with a grade below C in a gateway course, students not registered for the upcoming semester, and students not meeting prerequisites for the upcoming semester). Developing a strategic outreach approach was a major improvement over the past, when outreach to students was sporadic and unsystematic.

As part of its advising redesign, DACC also made several changes to its advising structure to promote greater student engagement with advising and to improve communication between different areas of advising support. DACC has a split model of faculty and professional advisors. Students who have declared a major—either when they applied or later on—are assigned to a faculty advisor and/or a professional program advisor. Assignment is based on several factors, including major, program type, and whether the student is participating in a special program such as the University Transition Program, which is designed for students who did not meet the entrance requirements at NMSU and are starting at DACC. To strengthen this model, one of the major components of the redesign involved assigning advisors in the Academic Advising Center a specific caseload of students. Furthermore, several advisors from the center were also designated as liaisons between the center and the academic departments in their caseload areas, leading to more efficient communication between advisors, faculty, and staff.

ADVISING & TECHNOLOGY AT DACC

Assigned advising: Yes

Advising model: Split (shared between professional and faculty advisors)

Key advising roles:

- New students meet with a professional advisor as part of orientation
- Students who have declared a major are advised by faculty advisor in their program and/or a professional advisor

Average caseload:

- 600–900

Primary technology for the redesign: multifunction system

Primary technology's main functions:

- Student-advisor communication
- Early alerts
- Predictive analytics

Finally, DACC's efforts included several new initiatives led by faculty and professional advisors to increase STEM-related opportunities and academic support services. These included the creation of a new academic division in science, engineering, and mathematics, as well as an Academic Readiness Center (ARC) to provide students with information and academic support services such as informal advising and workshops on study skills and writing. One faculty member who was preparing to teach a workshop on math anxiety described the ARC as an enhanced tutoring center to help students with particular needs. In addition, the college hosted several events to promote STEM fields, such as a STEM showcase and a STEM summer prep workshop.

Redesign Strategies: Leveraging Technology

A key component of DACC's approach to restructuring advising services involved leveraging technology to provide a coordinated approach to student success efforts. Previously, when students received help from different student services staff members (e.g., admissions officers helping students with picking a major and career services professionals providing employment support), there was no way of sharing information among staff.

The multifunction system purchased by the university system offered a way to connect these processes. The system included early alert and predictive analytics functions to

identify at-risk students and develop intervention strategies, as well as personalized student dashboards and shared case notes to monitor student progress. Support staff were able to use the tool to communicate with each other about their interactions with students. It also allowed for the assignment of specific students to professional and faculty advisors and improved standardization of processes and records.

Although the college was excited about the functionalities of the new system and successfully launched some parts of it, they encountered several implementation and installation challenges. Several significant issues emerged, including that the vendor was unable to provide the training and support the college needed to implement student alerts and communications. The vendor was also unable to integrate the new system with the existing student information system, which became a major stumbling block. As a result, NMSU decided to terminate the contract for the multifunction system in June 2018. The college is currently looking for a new technology platform.

Leadership Team

DACC built a diverse team across the college and broader university system to lead this effort. The leadership team consisted of members of NMSU's IT department and DACC's computer support department, advisors from all campuses, institutional research representatives from four campuses, staff from DACC's office of public relations and development, and faculty and division deans from the NMSU System (main campus and four community colleges).

The college created a separate implementation team consisting of DACC's vice president for academic affairs, who represented campus senior leadership and representatives from these offices and centers: academic advising, admissions, financial aid, the student accessibility resource center, institutional analysis, and computer support. One responsibility of the implementation team was to develop the criteria for selection of the technology platform. An implementation team liaison also shared monthly updates with senior leadership who were not part of the regular meetings.

MAIN ACTIVITIES AT DACC

Year 1:

- Reorganized academic divisions to emphasize STEM education
- Established and expanded leadership team to include key staff and faculty from entire NMSU system
- Selected new CRM system

Year 2:

- Implemented new CRM systemr
- Replaced homegrown tutor center sign-in system to track students who visit the Academic Readiness Center
- Created early alert calendar in CRM system to target at-risk students

Year 3:

- Canceled contract with CRM vendor and pursued other technology solutions and reforms

Successes

Increased collaboration within the college and between the college and the university system. Despite DACC's challenges with the technology system, successes were evident. Among them was the improved collaboration both within DACC and between DACC and NMSU. Not only did communication channels open up between

different departments at DACC, such as IT, institutional analysis, and student services, but the relationship between DACC and NMSU improved dramatically. One leader commented: "I've worked for the system whether it's on the university campus or at DACC for 20 years. I've worked on both sides. I've never seen so much collaboration before. It's because of the urgency to help students succeed. It really is happening at all levels."

Improved support for STEM. DACC has been able to increase STEM-related support services by providing new opportunities for students to learn more about STEM careers and by creating a new academic division for STEM fields.

Dedication to student retention and completion. As a result of the college's broader student support redesign, the college strengthened its commitment to investing in advising and technology reforms as a means of improving student retention and completion. Demonstrating this commitment, the college moved forward with implementing additional technology tools to support completion despite earlier technology challenges. Most notably, the college added a new scheduling tool. Implemented in fall 2018, the tool allows students to plan their coursework alongside their out-of-class commitments, such as employment and family responsibilities. Ideally the tool allows students to plan schedules that will enable them to progress more quickly through their coursework, thereby increasing their likelihood of completing.

Challenges

Communication issues. Although college personnel knew the administration was discussing making changes to technology, some groups (advisors, in particular) did not feel that they had sufficient input into the specifics of these plans.

Lack of vendor support. Building early alerts, engagement plans (communication plans including emails, phone calls, text messages, and other mobile notifications that are scheduled and distributed to a select population of students over a set period of time), and scoring plans (that use performance data to predict students' risk levels) took the implementation team longer than expected due to a lack of information from the vendor. Furthermore, not all student records were initially uploaded to the new multifunction system, pushing back the launch date. When the system was launched, participants felt disappointed with the support and training the vendor provided.

Technological limitations. The technology platform's limited functionality was a significant challenge. Because the system was not integrated with the student information system, many of the features did not work as intended. As a result, advisors needed to use both tools, rather than just one, for different functions.

Lessons Learned

Given what we have learned from the advising redesign work undertaken by these four colleges, six major lessons emerge:

1. **Establish diverse, committed leadership.** At each of the four colleges, the complex and iterative advising redesign work was facilitated by including a wide range of stakeholders from across the organization. Each college had a core leadership team consisting of administrative-level employees at the college (and in the cases of DACC and HCC, the university system) who provided high-level support to the redesign. The colleges also had teams comprising staff from across student services, academic support, and IT that facilitated the work on the ground. Though colleges cannot predict turnover issues, they can ameliorate potential problems by establishing multiple levels of leadership early in a project and ensuring that a person or persons "owns" the work from the beginning.
2. **Integrate faculty into the work early.** For each college, advising redesign was conceived with the aim of keeping students in college and supporting them to be successful. Because faculty interact with students frequently and are acutely aware of how students are doing academically, it is imperative that faculty be involved in redesigning student support efforts. With the exception of HCC, each of the colleges built on a formalized split model of advising in which faculty are involved with advising students in some way. Though HCC did not have this type of formalized faculty advising, the college leveraged the grant to launch a faculty-student mentoring program. It is important to note that faculty at some colleges were reluctant to use technology tools for student support activities. Through early and widespread faculty involvement in planning, purchasing, and implementing technology tools, colleges can reduce issues of buy-in and expedite the process of adoption and scaling.
3. **Remain open to changing advisors' job responsibilities.** A key part of the advising redesign success at these four colleges was the recognition that engaging in advising redesign involves not only adopting new practices and launching new technologies, but also reassessing advisors' roles. At DACC, while it had been standard practice for faculty members to begin serving as advisors after students declared a major, faculty members became even more involved in student support through the development of the Academic Readiness Center (ARC) for informal advising and academic skills workshops. Trident transformed the position of orientation leader into a more comprehensive case management role, changing the job title to navigator. Likewise, Zane State adopted a new title for professional advisors, success coach, signifying the shift from a drop-in model of advising to an assigned case management model. Furthermore, the role of faculty advisors evolved to promote earlier engagement with students and collaboration with success coaches.

Engaging in advising redesign involves not only adopting new practices and launching new technologies, but also reassessing advisors' roles.

4. **Remember that technology is not a substitute for meaningful human interactions.** At each college, students seemed to like the technology systems but benefited most from the technology when it fostered connections with advisors and student support staff. For instance, at HCC, students noted the increase in outreach and care they received from their advisors after an early alert notification. With the integration of technology into advising, advisors and students were able to have more meaningful conversations on educational and career aspirations. At Trident, prior to the introduction of new technology, students did not have easy access to their faculty advisors. The college's software let students schedule immediate appointments that allowed them to receive direction and support upon enrollment. Importantly, older students and students who did not have regular access to technology preferred hands-on, in-person support. Overall, it is clear that technology is most valuable when it strengthens the connection between students and advising staff.

5. **Recognize that selecting a technology product will require time, effort, and input from multiple stakeholders.** Given the number of advising-related technology products on the market as well as the financial (e.g., personnel time and capital costs), technical (e.g., compatibility with existing technologies), and regulative (e.g., state or university system requirements) issues to consider when purchasing technology, choosing the right tool can be a daunting prospect for any college. Although it may not be possible to foresee all potential pitfalls, it is crucial to conduct as much research as possible before investing in a product. Leaders involved in choosing new technology should acquire a good understanding of not only the tool's functions and capabilities, but also the vendor's availability for technical support. Finally, the team examining different products should include a wide range of stakeholders, especially those who will ultimately be using the tools.

The team examining different prospective technology products should include a wide range of stakeholders, especially those who will ultimately be using the tools.

6. **Embrace the iterative nature of the work.** These colleges encountered a variety of challenges including technical problems, initiative fatigue, resistance to change, low rates of technology adoption, communication breakdowns, staff turnover, and capacity issues. However, even when they seemed to hit major roadblocks, such as terminating the contract with a technology vendor, all of the colleges took away important lessons from confronting these challenges that have allowed them to move their student success efforts forward. DACC improved its relationship with its partners in the university system and changed the campus culture around student success. Zane State leveraged a strong foundation in change management principles to keep people motivated. Trident overcame initial confusion and resistance to new advising roles by increasing communication between academic affairs and student services, improving the overall relationship between the two offices. HCC struggled to fill a leadership void, but ultimately developed a key new position for centralizing ownership of the project. All four colleges were able to acknowledge what aspects of the redesign were working well and celebrate those successes, while at the same time leveraging challenges as opportunities to reevaluate and change course.

The cases of Trident, Zane State, HCC, and DACC illuminate the iterative and complex nature of planning for and implementing technology-mediated advising reforms in a community college context. These four colleges brought diverse groups of stakeholders together to reevaluate structures, procedures, and processes to foster an improved student experience and increased student completion. While their work is ongoing, all of the colleges reported learning a great deal about the internal and external barriers to enacting change, the upsides and challenges associated with integrating new and old technologies, and the importance of proactively reaching out to students who may be at risk or are struggling. Despite resource constraints and environmental challenges, each of these colleges put student success at the forefront of their efforts through communication from leadership to the college community, strategic planning, and wide-reaching institutional commitment.

Endnotes

1. Learn more about the iPASS initiative at http://www.achievingthedream.org/ipass.
2. MDRC is a nonprofit, nonpartisan education and social policy research organization. For more information, see https://www.mdrc.org/.
3. Learn more about CCRC's iPASS research and download previously published reports at https://ccrc.tc.columbia.edu/research-project/integrated-planning-and-advising-services.html.
4. TRIO is a federally funded program aimed at increasing college success among students who are first-generation, in financial need, and/or have disabilities. For more information, see https://www2.ed.gov/about/offices/list/ope/trio/index.html.
5. For more information on the Four Disciplines of Execution, see https://www.franklincovey.com/Solutions/Execution/4-disciplines.html.
6. According to the U.S. Department of Education College Scorecard, graduation rates across the UH system varied from 13 percent to 58 percent (2017).
7. 15 to Finish is a campaign focused on encouraging students to increase their chances of completing a credential by enrolling in at least 15 course credits each semester. For more information, see https://completecollege.org/strategy/15-to-finish/.
8. As of spring 2019, HCC was reevaluating its approach to using predictive analytics data, assembling stakeholders from across the institution to determine the best strategy for the college in using risk data.

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