CCRC COMMUNITY COLLEGE RESEARCH CENTER
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

RESEARCH OVERVIEW / FEBRUARY 2017

What We Know About Technology-Mediated Advising Reform

What Is Technology-Mediated Advising Reform?

Many advising departments in community colleges and open-access four-year institutions are understaffed, and advisors can only provide limited help to students—essentially acting as registration clerks.[1] In response, colleges are thinking about how to use technology to streamline advising, and companies have responded with scheduling software, alert systems, and other tools to help advisors and other college personnel keep track of students and perform their jobs more efficiently.

Increasingly, colleges are attempting to use the technologies as a catalyst to fundamentally redesign their advising and support services. The goal of this type of reform—sometimes called e-advising or iPASS (Integrated Planning and Advising for Student Success)—is to transform advising systems so that they can support a more intensive and personalized case-management model. Ideally, technology should reduce advisors' administrative workload and give them extra tools to help students choose majors and careers, find support in times of need, and graduate in a timely manner with a plan for the future.

Increasingly, colleges are attempting to use the technologies as a catalyst to fundamentally redesign their advising and support services.

But while technology is a necessary element of this type of reform, it is not enough on its own to ensure fundamental changes in advising and student support practices. To transform the experience of students—with the ultimate goal of increasing college completion rates—change needs to occur along several dimensions within an institution, from high-level policies to frontline workers' attitudes and practices.

This is part one of CCRC's practitioner packet on technology-mediated advising reform. For a discussion of what constitutes transformative change and examples of transformative and nontransformative advising reforms, see *Advising Redesign as a Foundation for Transformative Change* (part two). For a review of the technological and cultural conditions needed to support successful implementation of advising reforms, see *Creating the Conditions for Advising Redesign* (part three).

What Are the Major Functions of Advising Technologies?

More than 120 companies have released advising-related technology products[2] that can be divided into three major types:

- **education planning systems**—tools for selecting programs and courses, mapping degree plans, and tracking progress toward degree completion;
- **counseling and coaching systems**—tools for improving students' connections to support services; and
- **risk targeting and intervention systems**—tools such as early alerts for monitoring emerging indications of academic struggle.

Ideally, advising products integrate all three functions.

What Changes in Advising Practice Should Advising Technologies Support?

At many broad-access colleges, each advisor is responsible for as many as 1,200 students. This large caseload forces advisors to limit their interaction with students and focus on sharing basic information about registration and services.[3]

However, research has found that the most effective type of advising creates a long-term teaching relationship between student and advisor, where the advisor not only disseminates information but also guides students to develop the problem-solving and higher order cognitive skills they need to navigate college.[4] Effective advisors also go beyond academic advising, integrating academic planning with career planning and helping students navigate academic and nonacademic support services, such as tutoring, mental health counseling, and benefits access. We call this SSIPP advising: sustained, strategic, integrated, proactive, and personalized.[5] Sustained and strategic advising catches students when they need help and connects them with the type of support they need when they need it. SSIPP advising is also multifaceted and proactive, so that students encounter supports whether or not they seek them out. Making nonacademic support a long-term, integral part of every student's experience means that, ideally, students will get the support they need to overcome life's obstacles and stay in college.

The most effective type of advising creates a long-term teaching relationship between student and advisor.

For a college to successfully reform its advising from a registration-clerk model to a SSIPP model, essential changes need to take place along three dimensions—structural, process, and attitudinal. Structural changes affect the organization or design of systems and business practices. Process changes involve modifications in individual engagement, behaviors, and interpersonal interactions with systems and business practices, including how advisors reach out to students and how they interact with students during advising sessions. Attitudinal changes address the core underlying attitudes, values, and beliefs of a college's personnel. Changes to one dimension without changes to the others will not fundamentally alter how a college operates (see part 2 of this packet, *Advising Redesign as a Foundation for Transformative Change*).

Comparing Structures, Processes, and Attitudes in SSIPP and Non-SSIPP Advising

DIMENSION	ADVISORS AS REGISTRATION CLERKS	SSIPP ADVISORS
Structural	• Advising is nonrequired, with most sessions offered on a drop-in basis. • Students have no assigned advisors. • Advising is focused on peak periods (i.e., registration or first year). • Advisors' ability to troubleshoot student issues relies on student self-report or initiative.	• Protocols and policies encourage a sustained and personalized approach—for example, requiring case notes, check-ins, or appointments; assigning specific students to specific advisors; or lengthening advising appointments. • Advising structures promote long-term relationships between advisors and students. • Tools are deployed that encourage a proactive, personalized approach, such as early-alert systems or program-planning software.
Process	• Appointments are focused on selecting courses for the upcoming semester. • Advising is understood as the delivery of information or a transaction. • Engagement with nearly all students takes place in the same way or at the same points in time. • Advising sessions emphasize course selection or academic planning.	• Advising takes the form of a teaching relationship—for instance, with advisors prompting students to think about their long-term academic and career goals and connect those goals with their current studies. • Risk targeting with predictive analytics and early-alert data is used to identify students who are academically at risk or struggling socially or emotionally. • An integrated approach to intervention is emphasized, with personalized outreach that is coordinated across the support services team serving the student, including faculty, advisors, and academic support staff. • Students and advisors engage in long-term program planning.
Attitudinal	• Advisors are viewed as registration clerks. • Advising is seen as a discrete function rather than a college-wide effort.	• Student services staff see holistic student support as their primary job responsibility. • Other college staff engage in student support activities. • Advisors believe in the advising-as-teaching approach. • Advisors conceive of student success as program completion (rather than student exploration, course completion, etc.).

What Is the Relationship Between Advising Redesigns and Guided Pathways Reforms?

Advising reform is an integral part of a comprehensive guided pathways redesign of a community college.[6] But can advising reforms stand alone? Advising redesign supports guided pathways reforms by helping students make more informed choices about majors and careers using tools such as program maps for individual program planning, and by helping them stay on their chosen path. But colleges can improve advising without implementing a complete set of guided pathways reforms. Students will benefit from more intensive supports even within existing program structures.

Student Attitudes Toward Technology-Mediated Advising

Research on student attitudes toward technology-mediated advising reinforces the notion that advising is most valuable when it is intensive and sustained. It further shows that technology cannot replace face-to-face interaction with knowledgeable professionals.[7] Data from focus groups with students indicate that:

- Students appreciate the ease and convenience of using technology for simple tasks, such as registration.
- Students want to talk to advisors for complex tasks, such as choosing a major and planning multisemester programs of study, so they can learn the steps for making such complex decisions. Technology can support that process by providing access to information and assisting advisors and students with planning.
- Students seek out counselors who can fill gaps in their knowledge.
- Students are open to messages designed to encourage them and help them stay on track, particularly though early-alert systems, if the messages are personalized and not punitive.

What the Research Tells Us

Is technology-mediated advising reform an effective strategy to increase persistence and completion rates?

Only a few studies have rigorously assessed the effects of e-advising on student outcomes, and they generally have assessed only one intervention at a time, well short of the comprehensive student support system that results from a full advising redesign. Despite the scarcity of rigorous studies on this topic, there is preliminary evidence that such reforms can have a positive impact on student outcomes, particularly when the technology-mediated intervention or alert is coupled with an additional person-to-person interaction.

There is preliminary evidence that e-advising can have a positive impact on student outcomes, particularly when coupled with an additional person-to-person interaction.

A Study of Technology-Mediated Coaching

The most compelling evidence in favor of e-advising comes from a study of technology-mediated coaching. The coaching program studied, InsideTrack, used a variety of communication methods, including phone calls and targeted, personalized text messages, to help students set goals, identify

connections between short- and long-term goals, learn self-advocacy, and improve time-management and study skills. The study evaluated the impact of InsideTrack on 13,555 students across eight nonprofit colleges and found that students who received coaching persisted at significantly higher rates than uncoached students.[8]

Studies of Early Alerts

One study of early alerts found that students who received an early alert and sought out tutoring persisted at higher rates than flagged students who did not receive tutoring.[9] Flagged students who went to tutoring improved their likelihood of earning 10 or more credits the semester that they attended tutoring by 7 percentage points (23 percent vs. 16 percent) compared with similar students who did not attend tutoring.

One study of early alerts found that students who received an early alert and sought out tutoring persisted at higher rates than flagged students who did not receive tutoring.

Another analysis similarly found that early alerts combined with personal contact improved student persistence.[10] In studies at three institutions, the authors used a predictive analytic tool to identify at-risk students and intervene through targeted emails and phone calls. Students who received the intervention were between 3 and 7.6 percentage points more likely to enroll the next term than those who did not.

A Study on Course Planning

Austin Community College and technology vendor Civitas Learning studied outcomes for students engaged in technology-mediated course planning.[11] Students who used the planning tool were 2.4 percentage points more likely to persist over the course of three terms compared with students who did not use the tool. Students who used the tool more often were also more likely to stay in college than those who used it less frequently.

CCRC's Research on Advising Redesign

CCRC's research on the implementation of advising redesigns has provided insight into the types of institutional changes that together lead to transformative change—and have the potential to improve student retention and completion.[12] To address the gaps in the evidence, CCRC is undertaking a major study of whether technology-mediated advising reform helps students stay in college and graduate. The next part of this packet examines what large-scale transformative change looks like and describes case studies of colleges implementing advising reforms with varying degrees of transformation.

Endnotes

1. Bailey, Jaggars, & Jenkins (2015a); Jaggars & Fletcher (2014); Karp (2013).
2. Tyton Partners (2014).
3. Kalamkarian & Karp (2015).
4. Appleby (2008); Lowenstein (2005).
5. Karp & Stacey (2013). The components of the SSIPP acronym have changed from sustained, strategic, intrusive and integrated, and personalized (SSIP).
6. The guided pathways reform approach—which entails a systemic redesign of the student experience from initial connection to college through to completion, with changes to program structure, new student intake, instruction, and support services—has gained increasing attention in recent years. See Bailey, Jaggars, & Jenkins (2015a, 2015b).
7. Kalamkarian & Karp (2015).
8. Bettinger & Baker (2011).
9. Lackner & Wynne (2014).
10. Milliron, Malcolm, & Kil (2014).
11. Civitas Learning (2014).
12. Karp, Kalamkarian, Klempin, & Fletcher (2016).

Sources

Appleby, D. C. (2008). Advising as teaching and learning. In V. N. Gordon, W. R. Habley, & T. J. Grites (Eds.), *Academic advising: A comprehensive handbook* (2nd ed., pp. 85–102). San Francisco, CA: Jossey-Bass.

Bailey, T. R., Jaggars, S. S., & Jenkins, D. (2015a). *Redesigning America's community colleges: A clearer path to student success.* Cambridge, MA: Harvard University Press.

Bailey, T., Jaggars, S. S., & Jenkins, D. (2015b). *What we know about guided pathways.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Bettinger, E., & Baker, R. (2011). *The effects of student coaching in college: An evaluation of a randomized experiment in student mentoring* (NBER Working Paper No. 16881). Cambridge, MA: National Bureau of Economic Research.

Civitas Learning. (2014). *Designing and implementing a transformed advising model: Austin Community College* (Learning Brief). Retrieved from http://cdn2.hubspot.net/hubfs/488776/Learning_Together/ACC_Learning_Together/Austin_Community_College_Learning_Brief.pdf

Jaggars, S. S., & Fletcher, J. (2014). *Redesigning the student intake and information provision processes at a large comprehensive community college* (CCRC Working Paper No. 72). New York, NY: Columbia University, Teachers College, Community College Research Center.

Kalamkarian, H. S., & Karp, M. M. (2015). *Student attitudes toward technology-mediated advising systems* (CCRC Working Paper No. 82). New York, NY: Columbia University, Teachers College, Community College Research Center.

Karp, M. M. (2013). *Entering a program: Helping students make academic and career decisions* (CCRC Working Paper No. 59). New York, NY: Columbia University, Teachers College, Community College Research Center.

Karp, M. M., Kalamkarian, H. S., Klempin, S., & Fletcher, J. (2016). *How colleges use integrated planning and advising for student success (iPASS) to transform student advising* (CCRC Working Paper No. 89). New York, NY: Columbia University, Teachers College, Community College Research Center.

Karp, M. M., & Stacey, G. W. (2013). *What we know about nonacademic student supports.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Lackner, E., & Wynne, P. (2014). *Early-alert and retention prediction.* Bayside, NY: Queensborough Community College, Office of Institutional Research and Assessment.

Lowenstein, M. (2005). If advising is teaching, what do advisors teach? *NACADA Journal, 25*(2), 65–73.

Milliron, M. D., Malcolm, L., & Kil, D. (2014). Insight and action analytics: Three case studies to consider. *Research and Practice in Assessment, 9,* 70–89.

Tyton Partners. (2014). *Driving toward a degree: The evolution of planning and advising in higher education, part 1: The supplier landscape.* Retrieved from http://tytonpartners.com/tyton-wp/wp-content/uploads/2015/08/Tyton_PlanningAdvising1.pdf

---

This research summary was prepared by Hoori Santikian Kalamkarian, Melinda Mechur Karp, and Elizabeth Ganga, Community College Research Center, Teachers College, Columbia University. Funding was provided by the Bill & Melinda Gates Foundation.

Suggested citation: Kalamkarian, H. S., Karp, M. M., & Ganga, E. (2017). *What we know about technology-mediated advising reform.* New York, NY: Columbia University, Teachers College, Community College Research Center.

CCRC COMMUNITY COLLEGE RESEARCH CENTER

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Community College Research Center
Teachers College, Columbia University
525 West 120th Street, Box 174
New York, New York 10027
Tel: 212.678.3091 Fax: 212.678.3699
ccrc@columbia.edu
http://ccrc.tc.columbia.edu