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In this chapter, we describe efforts by growing number of colleges and universities to redesign academic programs and support services to create "guided pathways" designed to increase the rate at which students enter and complete a program of study.

Get With the Program … and Finish It: Building Guided Pathways to Accelerate Student Completion

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Many Choices, Little Guidance

In research charting the educational pathways and outcomes of community college students, we found that students who enter a program of study in their first year are much more likely to complete a credential or transfer successfully than are students who do not get into a program until the second year or later (Jenkins & Cho, 2012). This is perhaps not surprising. What is surprising is how little attention many community colleges pay to helping students get into and through programs of study.

Most community colleges offer a wide array of programs. Yet, colleges typically provide little guidance to help new students choose a program of study and develop a plan for completing it (Venezia, Bracco, & Nodine, 2010). This is so even though many if not most new students enroll in community colleges without clear goals for college and careers and may not have a clear idea even of what the opportunities are (Gardenhire-Crooks, Collado, & Ray, 2006). Career services and advising are available to students who seek them out, but studies suggest that those who need them the most are least likely to take advantage of them (Karp, O'Gara, & Hughes, 2008).

Students who are undecided about what program to enter are often assigned to "general education" by default (Grubb, 2006). One rationale for treating undecided students as "general studies" students is that it gives them the opportunity to take a variety of courses and explore different fields without limiting any future options. However, even in states that have policies guaranteeing transfer of a core general education curriculum, there is no guarantee that credits will be accepted for credit toward junior standing

in a particular major because major requirements are often set by individual departments within transfer destination institutions (Gross & Goldhaber, 2009). Thus, to guarantee efficient transfer of credits, students have to have a clear idea of what program they want to transfer to. And even if their goals are clear, information on transfer requirements is often complicated, hard to find, and unreliable (Kadlec & Martinez, 2013).

While community college departments closely monitor enrollment in their courses, they often do not know which students are pursuing programs of study in their fields and thus do not track students in their programs to ensure that they make steady progress toward achieving their goals for program completion and transfer (Karp, 2013). As a result, many students end up self-advising.

With so many choices and without a clear roadmap or someone monitoring their progress, it is not surprising that many community college students indicate that they are confused and often frustrated trying to find their way through college (Venezia et al., 2010). The lack of clear guidance can lead students to make costly decisions (Rosenbaum, Deil-Amen, & Person, 2006). Indeed, there is evidence from research on the course-taking patterns that many community college students are pursuing suboptimal pathways (Crosta, 2013). When asked, students indicate that being in a program with a well-defined pathway would improve their changes of persisting, completing, and transferring (Public Agenda, 2012).

Building Guided Pathways to Success

Under the prevailing model common to community colleges, students are left to navigate a complex and often confusing array of programs and courses and support services mostly on their own. Instead of letting students figure out their own paths through college, a growing number of colleges and universities are creating "guided pathways" for students. The elements of this approach include three key features, described as follows.

Clear Roadmaps to Student Goals.   In institutions that have implemented guided pathways reforms, academic programs are clearly mapped out by faculty to create educationally coherent pathways, with learning outcomes clearly defined and aligned with the requirements for further education and, in occupational programs, for career advancement. Students are given a default sequence of courses to follow for their chosen programs based on maps created by faculty, although they can still opt out. Rather than restrict students' options, the guided pathways approach is intended to help them make better choices so that they will be more likely to achieve their goals.

On-Ramps to Programs of Study.   Colleges and universities are rethinking intake, advising, and remediation as on-ramps to programs of study. Mechanisms are in place to help new students develop or clarify goals

for college and careers and create an academic plan. As part of their plans, students are required to choose a field of study with a default curriculum that gives them a taste of the given field and helps them decide if they want to pursue a specialized course of study in the field or switch to another one. Teaching of academic foundation skills and college knowledge and success skills are contextualized in college-level coursework in the student's field of interest. Students who cannot be placed in college-level courses are helped to move through remediation as quickly as possible.

Embedded Advising, Progress Tracking, Feedback, and Support. Students' progress according to their plans is tracked and frequent feedback is provided to them, their advisors, and instructors. Advising is redesigned to ensure students are making progress based on academic and nonacademic milestones, such as choosing a major, applying for transfer, and updating a résumé. Close cooperation between professional advisors and faculty ensures smooth transition from initial general advising to advising in a program. Early-alert systems signal when students are struggling and set in motion appropriate support. Advising and other necessary supports are designed as defaults that students are expected to use unless they opt out.

Four-year institutions were among the pioneers in developing the guided pathways approach. One example is Florida State University (FSU), where, beginning in the late 1990s, faculty began developing program maps that lay out for every program default course sequences and milestones that students must achieve over the entire course of the program. Students who are undecided are required to choose an "exploratory major" in one of four fields. The exploratory majors give students a structured path for choosing a major. Students can only stay in a premajor for up to three terms, after which they have to choose a specific major. FSU has found that even with the guidance provided by the program maps and premajors, a robust system of advising and other supports is still needed, especially to help students select majors, for transfer students and other special populations, and for students who are not making progress or fall off-track. FSU officials contend that these efforts are at least part of the reason the university has been able to improve retention rates and graduation rates for students overall and for closing the graduation rate gap between minority students and their peers (Carey, 2008).

To help students choose from among the more than 250 majors it offers, Arizona State University (ASU) asked faculty members to map out the path to a degree in each field. They lay out a default curriculum for students to follow each semester and milestones students need to achieve to stay on track. They also identify "critical courses" that should be taken early in a student's program and can be used to predict a student's likely performance in the major. ASU uses a sophisticated electronic advising system called eAdvisor to monitor students' progress along their map and identify when they may be foundering. As at Florida State, undecided students

are required to enter an exploratory major in one of the five most popular program areas. Like students in regular majors, students in exploratory majors are required to follow a "major map" which shows the prescribed sequence of courses by term. Students in exploratory majors are also required to enroll in a sequence of one-credit major and career exploration courses, which are designed to lead students through the process of choosing a major.

Based on the major maps, ASU has developed transfer admissions guarantees in particular majors with every community college in Arizona. Community college students who complete the sequence of courses specified in the agreement for a particular major are guaranteed admission as juniors into that major at ASU and receive a somewhat reduced level of tuition through ASU's Tuition Commitment Program (for Arizona residents). ASU is collaborating with the Maricopa Community Colleges and others to develop an information system to allow ASU and community advisors to track student progress along these pathways. ASU has also assigned transfer admissions specialists to work with students and their advisors on the community college campuses. This is an example of two- and four-year institutions working together to develop guided transfer pathways on a very large scale.

Community colleges are also beginning to implement the guided pathways approach on their own. In selecting Valencia College as the first winner of the Aspen Prize for Community College Excellence, the Aspen Institute cited Valencia's "life map" academic and career planning system that is linked to clear pathways, including "premajor" tracks aligned with the requirements for junior standing in majors at partner universities for students seeking to transfer.

In 2009, Queensborough Community College in New York began requiring all first-time, full-time students to enroll in one of five Freshmen Academies based on their interests and goals. Each academy has a "freshmen coordinator" who serves as an academic advisor and advocate for students in that academy, and at least one faculty coordinator responsible for working with faculty and student affairs staff to promote the adoption of high-impact teaching practices and build academic communities of students, faculty, and others with similar interests and aspirations. The college has surveyed students in the Academies extensively. According to the college researcher who oversees evaluation of the Academies, "Students say that being in an academy gives them a sense of identity as a student .... It causes them to reflect on what they want to do, and what it will take to move ahead in the field" (D. Jenkins, personal communication, May, 2013). Students are not locked into a particular Academy. The experience in an Academy leads some students to change their minds about what they want to study and do; indeed, approximately 20% of students switch academies in the first year. The college reports that after implementing the Freshman Academies in fall 2009, first-year retention rates increased. The college's three-year graduation rate for first-time, full-time students has also increased since

then. College staff acknowledge that they cannot attribute these improvements to the Academies alone, pointing out the college has done many things during this period to improve student outcomes. Still, these results along with very positive reviews by students and faculty have convinced the college to require all new students, whether full or part time, to enroll in an Academy when they enter the college.

In examining why many of its students do not complete, Miami Dade College (MDC) found that the pathways to program completion were often unclear, particularly in the "pre-baccalaureate" program area, where the largest number of students are enrolled and where completion rates are also relatively low. Students had too many choices of courses. Academic support was often misaligned with academic programs, and the information students received to help them navigate programs and services was often inconsistent and unclear.

To address this, in academic year 2012–2013, MDC convened a group of 27 faculty members who, in consultation with their departments and college-wide instructional committees, mapped out program pathways in the five largest program areas, which account for over 80% of degree-seeking students at the college. The charge to the pathways mapping team was to create maps that specify a default sequence of courses for students pursuing degrees in those fields. The maps, which included versions for full- and part-time students, had to meet three criteria. First, all courses in each pathway must transfer seamlessly to enable students to achieve junior standing in target bachelor's programs. Second, each pathway should indicate specific general education courses that are relevant to the given major field. For example, the pathway map might say: "This is the social science course recommended for Criminal Justice majors." And third, the curriculum should provide opportunities for students to master all 10 MDC learning goals for general education.

All entering students are required to see an advisor and develop an academic plan based on the pathway maps. MDC is also creating "communities of interest," default first-year programs of study in broad fields like business or health science that will be designed to introduce students to the field and decide if they want to pursue more specialized study or switch to another field. Thus, rather than implement small innovations and try to scale them up, MDC, like the other institutions profiled here, is innovating at scale, redesigning programs and support services in ways that will affect thousands of students.

Supporting Evidence

Rigorous research on the effectiveness of guided pathways in higher education is just beginning. An example, in preliminary results from a random-assignment study of CUNY's Accelerated Study in Associate Programs (ASAP), which requires students to attend college full time in a

block-scheduled course of study and provides a rich array of supports and incentives for up to three years, MDRC found extraordinarily strong effects on student retention and credit accumulation (Scrivener, Weiss, & Sommo, 2012).

Research on organizational effectiveness and improvement strongly suggests that to achieve large improvements in student outcomes, piecemeal changes will not suffice. Rather than try to bring to scale "best practices," colleges and universities need to redesign their policies, programs, and services at scale (Jenkins, 2011). The guided pathways approach reflects a set of principles of practice that are supported in the research literature and that colleges can follow in this redesign process. Three of these principles are described briefly as follows.

Defaults and Active Choice.   The complex processes students have to negotiate to enroll in and navigate through broad-access institutions can be overwhelming for students. A large body of rigorous research from behavioral psychology indicates that too many complex choices can lead to the sorts of behaviors we often see in students: indecision, procrastination, self-doubt, and paralysis (Thaler & Sunstein, 2008). In contrast, a simplified set of options including clear information on each option's costs and benefits, or the provision of a "default option" designed by experts, can each help people make more optimal decisions. Applied to broad-access institutions, the findings from this research suggest that colleges would achieve better outcomes by simplifying bureaucratic procedures (such as registering for classes and applying for financial aid) and offering more clearly structured programs, each with clearly defined and prescribed requirements, sequence of courses, and expected outcomes (Scott-Clayton, 2011). One reason that community colleges are so dependent on advisors is that the program paths are not clear and students need an expert to help navigate through the maze of choices students encounter. But because the current paths are often so complicated that even expert advisors sometimes cannot figure them out, they not only need to be clarified, they must be simplified as well.

Research on behavioral psychology shows that people can handle complex decisions if they are helped to think through the options hierarchically. One way to do this is by organizing complex choices into more manageable sets, but requiring the chooser to choose from among the sets (Keller, Harlam, Loewenstein, & Volpp, 2011). This "active choice" technique is apparent in the efforts described earlier of institutions like Arizona State to organize specific degree programs into a limited set of broad streams or exploratory majors that new students are required to select, but that help guide them through the process of choosing a specific major—or switching to another field if their initial choice is not a good fit.

Program Coherence.   Research on K–12 education finds that schools that are able to achieve greater gains in student outcomes, particularly with students from disadvantaged backgrounds, have higher levels of "instructional program coherence." This is defined as "a set of interrelated

programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate, and that are pursued over a sustained period of time" (Newmann, Smith, Allensworth, & Bryk, 2001, p. 299). The programs and supports offered by community colleges are often lacking in coherence. By this principle, to improve student outcomes, colleges need to ensure that all aspects of their programs and services—including orientation and intake, placement testing, remediation, curriculum, instruction, assessment, academic support, and so on—are well integrated and aligned to achieve program-level learning goals.

Integrated Supports.   Research suggests that college students benefit from nonacademic supports that help them create social relationships, clarify goals for college and careers, develop college know-how, and address conflicting demands of work, family, and college. Efforts to build on-ramps that help students choose and enter a program of study should include supports that address these four areas (Karp, 2011). These support services should ideally be offered in a way that is integrated into students' primary academic experience rather than offered separately. Behavioral research and research on learning suggests that it is motivating for students to see how they are proceeding along their chosen path. Thus, it is critical to provide frequent feedback to students on how they are progressing, both to encourage students who have reached important milestones and to help students who are not making progress or who are off-track.

None of these principles suggests a single best way that colleges should carry out any of their many functions. Instead, they represent principles of practice, grounded in research, that colleges can follow in redesigning programs and supports to increase the rate at which students enter and complete a program of study.

Collaboration Is Key

Collaboration is important to any major organizational reform, but it is critical to efforts to implement guided pathways. To map out program pathways, faculty need to work with transfer institutions and employers in order to define meaningful learning outcomes. And they must also collaborate within and across departments to systematically build those outcomes across a clearly defined sequence of courses. To help guide students into those pathways and keep them on track, faculty and student services staff need to work together to monitor and support students as they enter and progress along a program path.

For guided pathways reforms to be successful, therefore, college leaders need to create time and support for faculty and staff to collaborate. As it is, professional development at community colleges is often viewed either as information sharing geared to a wide audience on campus—such as at the typical faculty development day—or an activity design to build the skills and knowledge of individual faculty members. Colleges might

consider redirecting at least some resources currently spent on conventional forms of professional development to collaborative efforts, such as providing training, facilitation, and other support as needed by teams of faculty and staff working together to create guided pathways. This reframes professional development as a strategic activity that supports the collective involvement of faculty and staff in organizational improvement rather than an activity that mainly supports professional growth of faculty and staff as individuals.

To build an infrastructure that will support ongoing efforts to implement and improve guided pathways, colleges need to rethink not only their approach to professional development, but also their committee structures, institutional research activities, program review processes, budgeting practices, and policies for employee hiring, performance review, and incentives. All such practices should be reviewed with a view to ensuring that efforts to increase the rate at which students "get with a program … and finish it" become an integral part of the way community colleges do business.

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