Changing Course

A Planning Tool for Increasing Student Completion in Community Colleges

COMPLETION BY DESIGN
assistance team

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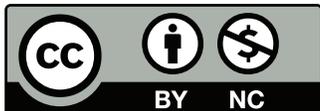BY DESIGN
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Completion By Design is an initiative of the Bill & Melinda Gates Foundation's Postsecondary Success Strategy.

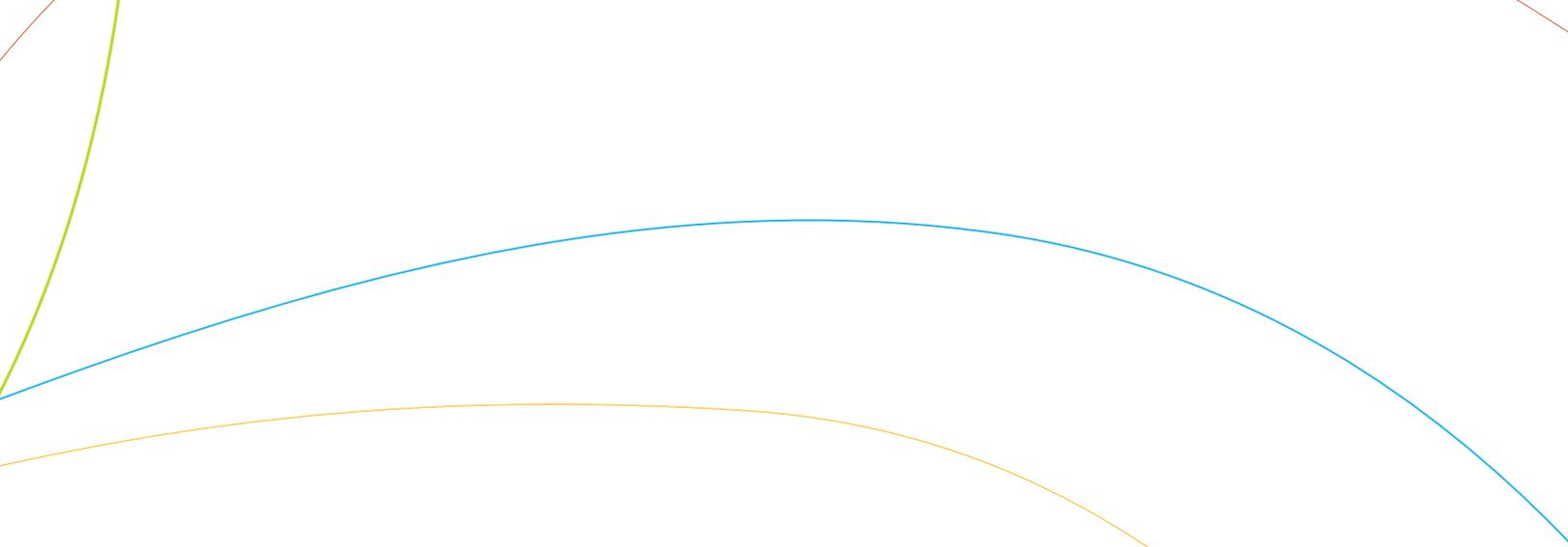Completion By Design Assistance Team is a project of the Tides Center.

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Acknowledgements

Introduction

The main purpose of this planning tool is to help community colleges facilitate productive conversations and develop systemwide plans to raise student completion rates substantially. The planning tool is initially targeted at colleges participating in the Completion by Design initiative. Based on these colleges' experiences and feedback, the planning tool will be revised and augmented as a living document, to capture and disseminate information about improving student completion rates.

This planning tool draws from the ideas described in *Changing Course: A Guide to Increasing Student Completion in Community Colleges* and is designed to serve as a complement to that document. Whereas the guide introduces the key goals and principles of the Completion by Design initiative, this planning tool offers a series of self-reflective questions to assist community colleges in examining their own areas of strength and their emphasis on increasing student success on their campuses. As colleges use these questions and other inquiry-based processes to rethink and redesign their services and programs, this planning tool also provides them with information about the range of practices that community colleges have used to improve student completion rates.

It is important to emphasize, at the outset, that the community college practices described in this planning tool are presented not as suggested practices for any particular college, but as prompts to assist colleges in (1) understanding the broad array of innovations that have been implemented at other colleges and (2) determining potential areas of further focus and analysis for the development of broad-scale, system-level change directed toward increasing student completion. As the guide describes in greater detail, research strongly suggests that the implementation of isolated practices, no matter how good the practice or its implementation, is unlikely to have much effect on completion rates overall, and that, similarly, small pilot projects with high per-student costs are unlikely to ultimately benefit large numbers of students or to be sustainable over time. Thus, while colleges will likely need to adopt some new practices or adapt some older practices, practice-based reforms cannot be the primary work undertaken by colleges participating in Completion by Design. The goals of the initiative (as explained in detail in the guide) demand much more than that; they demand that colleges plan and develop strong *completion pathways* — that is, integrated sets of institutional policies, practices, and programs intentionally designed to maximize students' progress at each point along their community college experiences, starting at students' first point of contact and continuing until students have earned a certificate or degree.

Experts in the field believe that a comprehensive approach to community college redesign is the logical next step; however, such an approach has not been attempted prior to the Completion by Design initiative.[1] As a result, as they use this planning tool, participating colleges will need to question whether the practices described are useful and feasible within a comprehensive redesign to increase student completion. In addition, colleges will need to grapple with the complexities associated with community college redesign, such as challenges related to change management, faculty participation, resource allocation, professional development, and data use and technological capacity. As the cadres of colleges participating in Completion by Design develop their plans, the Completion by Design Assistance Team (CDAT) can provide guidance in these areas, as well as additional research tailored to each cadre's emerging areas of emphasis and inquiry.

How to Use This Planning Tool

This planning tool is organized by the stages represented in the loss and momentum framework, as shown on page 5. The planning tool poses one or more high-level framing questions related to student success at each stage. For each of the first three
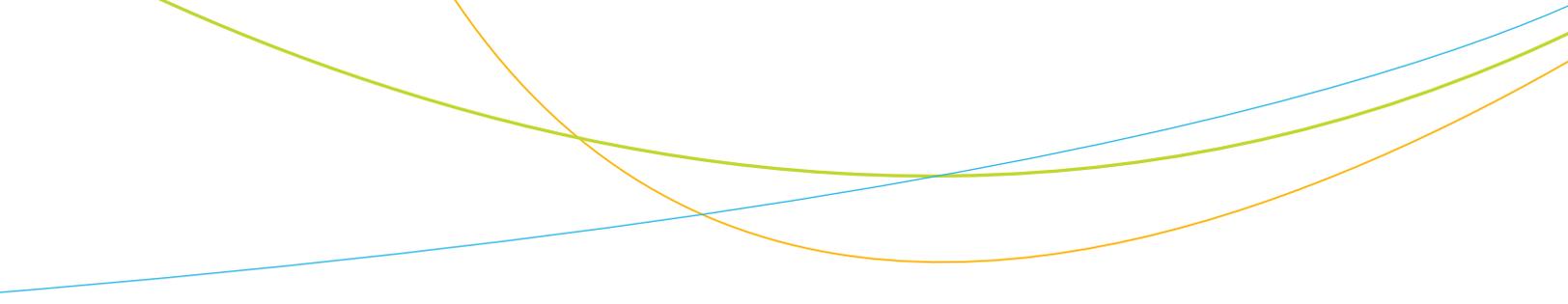
stages in the framework — connection, entry, and progress — there are two general areas of interest, so readers will find two sets of framing questions for each of these stages. For each area of interest, the planning tool provides:

- Background information, including some of the key challenges that students face at this stage of their community college experiences;

- A series of self-examination questions to assist participating colleges in guiding discussion and deliberation; and

- Some examples of practices that colleges across the United States have implemented to try to address the challenges students face at this stage.

This planning tool is designed to be used in conjunction with the data-intensive Pathways Analysis conducted in partnership with the Community College Research Center (CCRC), JBL Associates, and the RP Group. As colleges examine and explore the results of the Pathways Analysis, they can use the self-reflective questions in this planning tool to generate and guide discussion. Likewise, they can refer to the examples of college practices provided herein to better understand the efforts colleges have used to increase student success, and to consider areas of emphasis for their own efforts.

Depending on their areas of need, some cadres or individual colleges may find it helpful to use each stage of this planning tool to generate discussion, and to do so in the order of the stages in the loss and momentum framework. Some colleges, on the other hand, may want to begin using the tool at a later stage in the framework, depending, for example, on the results of their Pathways Analysis; others may decide to assign different stages to specific teams of faculty, staff, and/or administrators.

Regardless of the stage at which colleges begin using the planning tool, however, they will need to direct their efforts toward the development of strong completion pathways that offer comprehensive college redesign. To assist in this development, CDAT is prepared to offer access to more focused information and guidance. For example, national expertise is available based on the needs of colleges. In addition, colleges can help shape the evolution of the initiative's Knowledge Center (http://knowledgecenter.completionbydesign.org/knowledge-center) by articulating their questions about redesign to the assistance team, enabling the CDAT partners to tailor resources to colleges as needs and areas of focus emerge.

Supporting Student Success:
PREVENTING LOSS, CREATING MOMENTUM

a system designed for student completion

COMPLETION BY DESIGN *assistance team*

LOSS POINTS

- Do not apply to PS
- Delayed entry to PS
- Poor college counseling leads to under enrollment, poor matching and failure to obtain financial aid for which they qualify

- Poor academic preparation
- In community colleges, 60% referred to developmental education, only 30% ever take subsequent college level courses
- Fail to enroll/pass Gatekeeper courses (i.e., entry-level math and English)

- 75% of low-income students need to combine work and school; work more than 20 hours/week; schedule changes
- Part-time enrollment means slow progress, loss of momentum
- Life happens/complex lives means many disruptions; stop out or drop out

- Limited advising leads to credit (and debt) accumulation not matched to degree attainment
- Leave with credits needed for degree except for college level math
- Transfer without credential
- Credential doesn't garner family-supporting wage job or isn't "stackable" to career that does

STUDENT PROGRESSION

CONNECTION
Interest to Application

ENTRY
Enrollment to Completion of Gatekeeper Courses

PROGRESS
Entry into Course of Study to 75% Requirements Completed

COMPLETION
Complete Course of Study to Credential with Labor Market Value

MOMENTUM STRATEGIES

- Consistent college and career ready standards
- Foster college-going norms supported by peers and trusted adults
- Increase understanding of college requirements, application and financial aid processes/Improve information, matching and financial aid products
- Dual enrollment/Early College High Schools (on-ground, online options), AP credit
- Take college placement exam in high school
- Enrollment directly from high school

- Diagnostic assessment and placement tools
- Mandatory "intrusive" advising, attendance, life skills courses, declared courses of study linked career pathways
- Improved academic catch-up (prevention, acceleration, supplemental instruction, concurrent enrollment, contextualization, and competency-based digital prep)
- Aggressive financial aid application support
- Course redesign to go further, faster, cheaper

- Innovative programs to incent optimal (e.g., high intensity, continuous) attendance
- Leverage technology to make real-time feedback, intensive advising, accelerated, flexible, and student-centered learning more available
- Intentional, accelerated, competency-based programs of study leading to credentials in high-demand fields like STEM and health care
- Provide emergency aid to deal with unexpected life events

- Mandatory "intrusive" advising
- Transfer with credentials incentives
- Remove barriers to graduation (e.g., fees, forms)
- Learn and Earn programs that combine credential attainment and work experience in field of study toward career pathway

STUDENT DATA SYSTEM (From Day 1 to Completion)

STUDENT ENGAGEMENT

LEADERSHIP FOCUSED ON COMPLETION (Faculty, Administration, Trustees)

Bill & Melinda Gates Foundation, 2011

First-Contact Experiences

FRAMING QUESTIONS FOR CONNECTION: How do prospective students — particularly low-income, nontraditional students — first learn about and engage with our college? How do these early interactions set the stage for a dynamic process of student engagement, support, and success over time?

CONNECTION	ENTRY	PROGRESS	COMPLETION
From interest until application	From enrollment until completion of gatekeeper courses	From entry into program of study until completion of 75% of requirements	From completion of program of study until credential with labor-market value

It is common for high school students to think that community colleges have no standards — that they will accept any student, regardless of the student's level of preparation. What high school students do not usually realize is that community colleges offer many levels of coursework, so that students do not automatically start with college-level, credit-level coursework. The more that community colleges can do to engage prospective students — especially low-income, nontraditional students — in college activities and programs, the more likely it is that students will arrive at college with a better understanding of the expectations and requirements. Educating students about community college in advance of their enrollment is a particular challenge because many students report that their enrollment in a community college was a "default" choice made at the last minute. Unsurprisingly, then, many students also report that they did not pay attention to community college outreach materials they might have received, since they had no intention of enrolling.[2] Thus, it is likely that providing clearer messages to students will not fix the disconnect entirely. This suggests the need for systematic efforts to align high school and community college expectations, policies, and practices, so that students will not need to rely solely on outreach from community colleges in order to be ready to succeed.

Meanwhile, research on college readiness suggests that providing information about college expectations to students as early as during middle school, or at least during the first two years of high school, can prompt students to think about and prepare for college.[3] It also appears important that these efforts extend beyond one-time outreach assemblies or "college nights" to include ongoing partnerships with high schools and community-based organizations, aimed at helping to ensure that:

- High school counseling programs inform all students about the rigors of academic and Career and Technical Education (CTE) programs at community colleges;

- Students receive clear information about college-level programs of study and how these programs relate to both high school curricula and career options after college;

- High school curricula are aligned with college curricula;

- Students visit college classes, receive syllabi, and see for themselves the levels of expectations;

- Students receive diagnostic information about how prepared they are for college coursework and, for those who are not adequately prepared, opportunities to catch up while still in high school;

- Students have opportunities to participate in dual enrollment programs, with adequate support to ensure success; and

- Students and parents have assistance in filling out financial aid forms and other college-related forms.[4]

The first four strategies in the preceding list are addressed in relation to the set of framing questions immediately below; the final three are addressed in relation to the framing questions on page 9.

The following questions may inform redesign efforts in this area:

- How does our college communicate its expectations about academic and noncognitive readiness to local high schools, community-based organizations, and adult education programs that serve low-income and nontraditional students? Is our outreach systemic? For example, do we provide training for high school counselors in order to align student preparation with our college's expectations and matriculation policies?

- Are our college's readiness expectations clear and easily accessible, online and in print, for high school counselors, teachers, parents, and students?

- What opportunities are available for prospective students, well before they plan to enroll, to visit college programs and to experience the rigor and the stimulation of college classes?

- How does our college work with feeder high schools to ensure alignment of curricula? For example, does our faculty work with high school faculty to share curricular requirements and pedagogy? Does our college work with its feeder high schools to offer pre-dual-enrollment opportunities to prepare students for college-level work?

- How does our college structure college-level programs of study? Are there clear and coherent course sequences? How is that information communicated in basic ways to local high schools and to adult basic education programs, so that they can include it in education and career planning for students?

- In short, is our college working with area high schools to ensure that high school graduation equals college readiness?

Examples of community college practices related to this area:

Many colleges have sought to develop strong, purposeful partnerships with feeder high schools and to provide clear messaging about community college requirements and expectations. This messaging can be much clearer if colleges identify a coherent set of primary academic and CTE programs, and if those programs identify the key readiness factors associated with success.[5]

The El Paso Collaborative for Academic Excellence offers a long-standing example of deep collaboration between high schools and colleges, focusing on the core functions of both. Examples of the Collaborative's academic alignment work include the T-STEM Center, the Math and Science Partnership, and Literacy in Action. The T-STEM Center focuses on building capacity in STEM areas within K–12 schools, including providing high school teachers with professional development that is aligned with postsecondary expectations for students. The Math and Science Partnership brings together El Paso's school districts, the University of Texas at El Paso, and El Paso Community College to strengthen relationships between education leaders; engage faculty and build capacity; ensure that curriculum, assessment, and instruction are aligned; and improve students' readiness for postsecondary education. One outcome of this partnership was the development of K–16 curriculum alignment frameworks in mathematics and science. Also, an algebra II framework and aligned end-of-course exams were developed to ensure that high school algebra II courses are aligned with the mathematics courses taken by college freshmen. The Literacy in Action program, which builds on relationships among literacy, mathematics, and science, was created to prepare students to think critically for reading and writing in the content areas of math and science. The program has developed writing curricula, professional literature study, problem-solving sessions, and protocols for classroom observations.[6]

FRAMING QUESTION FOR CONNECTION: What opportunities and incentives does our college provide to help prospective and incoming students prepare and plan for college-level programs of study?

CONNECTION	ENTRY	PROGRESS	COMPLETION
From interest until application	From enrollment until completion of gatekeeper courses	From entry into program of study until completion of 75% of requirements	From completion of program of study until credential with labor-market value

Most students begin community college unprepared for college-level coursework in at least one subject. Many arrive at college unprepared for what is expected of them as college students in general, in terms of both academic rigor and noncognitive skills. In addition to needing help getting "up to speed" academically in order to take college-level courses, many students need assistance with study skills, time management, education and career planning, and goal setting. Some states and some colleges are working to provide placement assessments for high school juniors and/or seniors, to signal to them that community colleges have academic expectations and to let them know where they need additional assistance academically while they still have time to catch up in high school. Some colleges are also working with high schools to develop dual-enrollment programs and to provide student success courses and bridge programs before students enroll in college, in order to better prepare students for college success.

The following questions may inform redesign efforts in this area:

- Can prospective students identify where they stand vis-à-vis our college's readiness expectations and/or placement assessments prior to enrolling? Do we have diagnostic assessments (online or otherwise) available for prospective students?

- For prospective students who are not prepared in specific areas, does our college work with high schools or adult education programs to offer opportunities for students to prepare at those locations and/or online?

- Does our college work with high school teachers and counselors to help them provide options for students to take courses that are aligned with college expectations?

- Does our college work with feeder high schools to offer student success courses in which high school students learn about both the academic rigor and the noncognitive requirements of college?

- What summer options are available to help prospective students explore our college's primary college-level programs of study and to prepare them for their programs of interest?

- Does our college encourage dual-enrollment programs? Can high school students take dual-enrollment courses that are prerequisites for college-level programs of study leading to a credential? Do those courses count as program credits?

- What student services — for example, education and career planning, online and in-person — does our college provide for prospective students, including dual-enrollment students?

- What assistance does our college provide for low-income, nontraditional students in filling out financial aid and other forms? Do students receive this assistance in time to be eligible for Pell grants?

Examples of community college practices related to this area:

Almost all colleges provide some form of pre-college outreach to high schools. Often, this outreach involves providing college literature to high school counselors or hosting events on either the high school or college campus to provide high school seniors with information about the college. Less common are programs that provide freshmen or sophomores with information about their level of preparation for college. Examples of these programs include providing students with college-level assessments as practice tests, or engaging students in a college-level assignment so that they can discover firsthand the level of preparation needed. In addition, early diagnostic assessments can help high school students identify specific deficiencies in their levels of academic readiness. Currently, most college placement assessments are not diagnostic, but Texas and Florida are working on developing diagnostic assessments.[7] One long-standing diagnostic test is California's Mathematics Diagnostic Testing Project.[8]

Diagnostic assessments of college readiness that are given during the junior year of high school, or even earlier, are likely to demonstrate that many students need coursework, support, and other interventions aimed at helping them catch up while in high school, so that they graduate ready for college. Suggested coursework includes student success courses, as well as English and mathematics classes aimed at getting students ready for college.[9] An example of a senior-year high school English course aligned with college expectations is the California State University (CSU) Expository Reading and Writing Course, which is now being used in high schools to help students prepare for community college as well as for the four-year CSU system.[10]

Broad-based dual enrollment programs and Early College Schools (secondary schools that educate traditionally underserved students and offer them the opportunity to earn substantial college credits while in high school) are examples of efforts to provide a wide range of students with experience earning college credits while in high school. These opportunities, often called credit-based transition programs, can enable prospective students to earn college credits early, get a "taste" of college, and potentially increase their preparation for and understanding of college.[11] Research suggests that such programs should have formal recruitment strategies for broad populations of students, coherent academic and CTE pathways, and integrated student supports at both

PRINCIPLES FOR EFFECTIVE DUAL-ENROLLMENT PROGRAMS

The following have been identified as important guiding principles in developing successful dual-enrollment programs:

- Create a clear purpose;
- Provide equal access and eligibility;
- Offer high-quality course options and student support systems;
- Ensure adequate funding and systems to track data on quality and outcomes; and
- Build governance and alignment to ensure coordination between high schools and higher education.

Source: Hoffman, N., Vargas, J., & Santos, J. (2008). *One ramp to college: A state policymaker's guide to dual enrollment.* Boston, MA: Jobs for the Future.

the high school and college levels. In many cases, existing academic or CTE programs in community colleges may need to be reoriented to include participation by high school students.

In addition, many colleges target some incoming students for intensive summer bridge programs or similar programs prior to enrollment. Successful programs seek to develop student engagement as well as students' academic skills and self-efficacy.[12] Components of an effective bridge program might include:

- Using diagnostic assessments to identify deficiencies in basic skills and providing intensive coursework in those areas;

- Working with students to develop study skills and other strategies to better prepare them for college success;

- Introducing students to requirements for college admission, placement, financial aid, and college-level programs of study;

- Providing students with a key support person — whether a counselor or faculty member — who can serve as a mentor; and

- Offering education or career planning to provide students with better perspectives about selecting a program of study.

Summer bridge programs for incoming students are also appropriate for adult basic education students, to help them advance to college-level programs in academic or career technical fields. Colleges can work with employers to develop programs to help adults or returning students pay for college; some employers have incentives for employees to continue their education in pertinent fields.

Education Planning and Entering a Program of Study

FRAMING QUESTION FOR ENTRY: How does our college work with prospective and current students to help them understand their education options and goals and select a program of study?

CONNECTION		ENTRY		PROGRESS		COMPLETION
From interest until application	▶	From enrollment until completion of gatekeeper courses	▶	From entry into program of study until completion of 75% of requirements	▶	From completion of program of study until credential with labor-market value
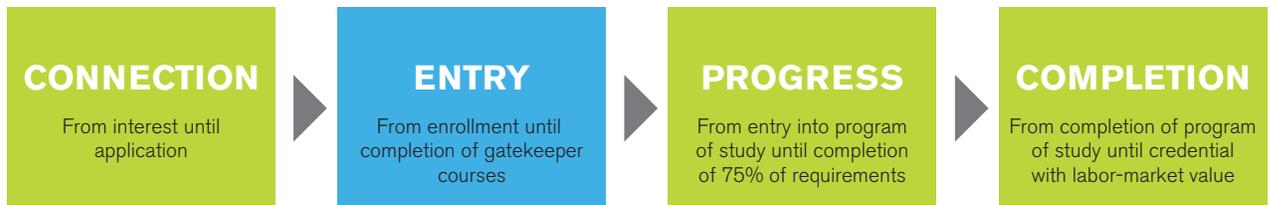
When first-time students show up to register at community colleges, they are often unaware of their relative level of preparation, uninformed about the institution's primary college-level programs of study, and unsure of their education and career goals, except in general terms. Colleges can facilitate student completion by establishing ways for students to receive and process information about each of these important issues. Such efforts are particularly critical now that resource cutbacks have forced community colleges to limit the individualized attention they can provide for students.

Currently, many students who are directed to take a placement assessment and are then shepherded into developmental education courses receive minimal or no counseling or information about education and career options. Even outside the developmental education sequence, many students take courses that do not count toward a certificate or degree. This suggests the need for colleges to transform "intake processes for colleges" into "education planning for students."

Having a cohesive set of primary academic and CTE programs, with clearly structured pathways leading to certificates and degrees, can assist students in their decision-making processes and facilitate their entry into a program of study.[13] It is crucial to clearly identify, and inform students about, key competencies and skills that students need across programs and within program streams. Examples of ways to provide this range of information include summer bridge programs

and other pre-matriculation opportunities, student success courses, extended orientation sessions that emphasize program entry and completion, preparation opportunities for placement assessments, and education planning and counseling — both online and in-person — linked to placement test results (for example, so that students who do not perform well on the placement tests understand the range of options available to them). Having a range of incentives and requirements, from performance-based scholarships to mandatory orientation and counseling, can also help encourage students to develop an education plan, select a program of study, meet the program's entry requirements, and take college-level classes in that program as soon as possible.

The following questions may inform redesign efforts in this area:

- How do our college's students first learn about competencies and skills needed for success in entry-level courses or college-level programs of study?

- How do our college's students first learn about placement assessments? Where can they find practice tests? When can they first take a placement test?

- How does our college conduct placement testing? Is it diagnostic? How is feedback provided to students about their performance?

- How does our college assess noncognitive knowledge and skills? How does our college provide remediation for noncognitive knowledge and skills?

- Who develops our college's standards, assessments, and cut scores for placement tests? Are assessment instruments connected to the skills and competencies needed for student success in the primary college-level programs of study?

- Does our college provide incentives or have requirements for students to register on time, be enrolled full time, attend orientation sessions, and enroll in student success courses? Does our college require all students to complete an education plan (either in-person with a counselor or other college staff member or online)?

- What steps are required for our college to eliminate late registration?

- Under what circumstances might it be in a student's best interest to pursue a certificate rather than a degree? Does our college inform students of the tradeoffs involved, and if so, how?

- What steps can our college take to ensure that students choose a program of study as soon as possible? What steps can our college take to accelerate the rates at which students begin taking college-level classes in that program of study?

- For each of our primary academic and CTE programs, what key student competencies are required for success in entry-level courses? Can some of these readiness expectations be generalized across program streams?

Examples of community college practices related to this area:

Many colleges provide opportunities for students to participate in an in-depth, first-semester student success course that serves as both an orientation to college life and a "how-to" seminar on study skills,

course requirements, education planning, and career planning. There is evidence that these courses have had positive effects on students' chances for completion. In a Florida study, students who completed a student success course were more likely to complete a certificate, persist, and transfer.[14] Similarly, in a study in Virginia, students who completed a college success skills course were more likely to earn college credits in their first year and to persist.[15] Colleges might want to consider requiring such courses for all students, or only for students who have not performed well on placement assessments. In addition, online or in-person orientation sessions can be designed to provide students with information that can help them plan their college studies.

The more that colleges know about the specific needs of individual students, the better able they will be to assist students with entering a program of study and making progress toward completion. Many researchers have suggested that there is a need for greater use of diagnostic assessments that can identify specific student needs, allowing colleges to then focus instruction on those particular needs.[16] Some colleges are using supplemental diagnostics, along with mandatory counseling and advising sessions, during high-impact times (e.g., before registration, midterms, and withdrawal dates). Others are experimenting with mandatory refresher courses for students, either on the day of the test or in the weeks prior, to help students be better prepared for their placement tests.

With regard to counseling services, some colleges are seeking to determine which services to provide through interactive online settings, which to provide through in-person group settings, and which to provide through in-person one-on-one settings. In addition, some colleges are trying an "every staff member is an advisor" approach, to ensure that every member of the faculty, staff, and administration is trained to help students make good decisions that improve their chances of completion. There is

also interest nationally in a "one-stop model" that would provide students with a single location, or a single hub of locations, on campus for placement, assessment, counseling, registration, and financial aid services.[17] However, many of these innovations in assessment, placement, and associated counseling practices are currently evolving, and their potential for success is unclear; as a result, the work of Completion by Design cadres in this area has the potential to add value to the field.

From a state policy perspective, states such as Connecticut and Vermont are re-examining cut scores for placement assessments, in order to align developmental education and gatekeeper courses more effectively.

The following innovations might also provide colleges with context that may inform their attempts to develop intake processes that are more student-centered:

Currently, many students register for classes so late that there is no time to provide them with the necessary guidance and preparation prior to the beginning of classes, and they are frequently unable to enroll in the classes they need because there is no more room in those classes. Eliminating late registration may be one way colleges could increase the chances that students have time to enroll in student success courses, take advantage of summer bridge opportunities, and work with counselors to develop education

plans. However, elimination of late registration must be accompanied by (1) effective and early messaging to students about deadlines and (2) sufficient course sections to satisfy student demand.

Not all students take advantage of available counseling. Colleges might want to consider requiring all students to meet with a counselor and develop an education plan prior to enrolling in courses. Some colleges have experimented with requiring that students participate in summer bridge programs and/or student success courses to focus their academic preparation, explore their career goals, and develop education plans.

Colleges might also want to consider experimenting with performance-based scholarships or other financial incentives to encourage students to enroll full time and/or to enter a program of study within their first year. Louisiana's performance-based scholarships for low-income students who are parents appear to have increased both the percentage of the participating students who stay enrolled after the first semester and the average number of credits those students earn during their first year. In addition, participants who remained in the study (some participants were relocated after Hurricane Katrina) were more likely than the control group to still be enrolled in college four semesters later, and they earned significantly more credits over that period of time.[18]

CONNECTION	ENTRY	PROGRESS	COMPLETION
From interest until application	From enrollment until completion of gatekeeper courses	From entry into program of study until completion of 75% of requirements	From completion of program of study until credential with labor-market value

Community college students face a host of challenges in catching up academically through developmental courses and/or succeeding in their entry-level courses — some of which are referred to as gatekeeper courses — in their program of study. Results of recent major reform initiatives suggest that focusing on revamping developmental education and/or gatekeeper courses may not be sufficient to significantly improve student completion rates.[19] Nonetheless, improving the rates at which students complete or bypass developmental education sequences, as well as the rates at which students enroll in and pass gatekeeper courses, is crucial in accelerating student entry into a college-level program of study — one of the key intermediate objectives of the Completion by Design initiative[20] — since students must enter a program of study in order to have the opportunity to complete that program.

To accelerate student entry into programs of study, colleges will likely need to involve developmental education faculty, all academic and CTE departments, and student service staff members. For example, there is much work to be done in all academic and CTE programs of study, in coordination with developmental education faculty, to identify the competencies and skills needed for success in each program's entry-level courses. It may be that greater instructional program coherence within academic and CTE programs can assist in integrating developmental education sequences with entry-level coursework.[21]

Similarly, there is much to be done in developing and using diagnostic assessments to identify student academic needs and to provide course modules and accelerated instruction to address those needs. Some colleges are experimenting with contextualized instruction, both through integrating developmental education with entry-level courses in academic or CTE programs, and through aligning coursework so that some developmental education and entry-level courses are provided simultaneously. Likewise, some colleges are working to integrate student support services with instruction, with the assumption that all students need instructional support if overall completion rates are to improve substantially. In short, the most promising and groundbreaking reforms aimed at getting students "up to speed" and completing entry-level courses appear to be those that engage faculty, staff, and administrators across an institution in collaborative redesign efforts focused on student success, so that instructional and support services are integrated and coordinated to meet student needs.

The following questions may inform redesign efforts in this area:

- How would we characterize developmental education at our college? Is it an isolated set of activities that are categorized as student services, or is it connected to our primary education pathways and core academic classes? Are there clear goals and specific objectives for developmental education at our college? Is there consistency between the goals

for developmental education and those for the college as a whole? Is developmental education part of our college's planning efforts?

- How many layers of bureaucracy are there between the chair of developmental education and the president of our college?

- Are the components of developmental education communicated clearly across all program and service units of the college?

- Have faculty in each academic and CTE program identified the competencies and skills needed for success in their entry-level courses? Do developmental education instructors, student support personnel, and core academic faculty have opportunities to meet with each other to align and/or integrate curricula and support services? Are our college's community outreach and workforce development programs part of these efforts?

- Does our college use diagnostic assessments to identify specific student academic needs, and do we provide course modules and accelerated instruction to address those needs? Do students have options to bypass developmental education sequences? If so, under what circumstances and through which alternative pathways?

- Does our college offer contextualized instruction in developmental education and in entry-level courses?

- Is student performance in developmental education and in entry-level courses monitored regularly in order to target support services to students and to make instructional adjustments?

- Are there enough sections of developmental education and entry-level courses (or modules) for students to efficiently stay on track to completion? Does the college provide incentives for students to stay on track?

- Does our college know which students are cleared to take entry-level gatekeeper courses but have not done so? What incentives do we provide for students to enroll in entry-level gatekeeper courses? How can we help more students pass these courses?

- How can new advances in adaptive learning technology be used to improve individualized instruction in developmental education and entry-level gatekeeper courses?[22]

Examples of community college practices related to this area:

A key priority for reform of developmental education is to ensure that basic skills instruction is integral, rather than peripheral, to the education enterprise.[23] This has widespread implications for how colleges are organized. In terms of student experiences, it suggests that, as colleges rethink developmental education, they need to consider how to integrate or align developmental education courses with entry-level courses in college-level programs of study, as well as with student success courses and other student supports, such as instructional support, education planning, and general academic counseling.

Research has shown that the more levels of developmental courses students are required to take, the less likely those students are to complete a college degree.[24] Several colleges are experimenting with different methods of accelerating students through the developmental sequence, such as compressing two-semester courses into one, offering instructional modules (rather than full semesters) targeted specifically to student deficiencies, and pairing developmental courses with entry-level college-credit courses.[25] The Accelerated Learning Program (ALP) at the Community College of Baltimore County is an example of an effort to "mainstream" developmental education students directly into college-level English courses. ALP allows students who place into the highest-level developmental writing course to

enroll in English 101 (a college-level course) instead, while simultaneously taking a companion course, taught by the same instructor, that meets immediately following the English 101 class. The companion course provides additional academic support, with the goal of helping students achieve success in the English 101 class. Class size for the companion course is small (only eight students) to allow for individual support and for the development of a strong cohort. Preliminary research suggests that participation in ALP is associated with improved outcomes in completion of English 101 and the following college-level course, English 102.[26]

In addition, some students who do not perform well on assessments and who face extended time in developmental education might benefit from reforms that align or integrate developmental education instruction with college-credit classes in programs the students are interested in. An example of a long-standing effort to integrate coursework can be found in the Integrated Basic Education and Skills Training (I-BEST) program developed by the Washington State Board for Community and Technical Colleges. The purpose of the I-BEST program is to help adult basic skills students access, and be successful in, postsecondary occupational education and training. Through this program, basic skills instructors and college-level CTE faculty work together to design and teach college-level occupational courses. With two instructors in a class at all times, students get support for basic skills development as well as occupational training. The program also provides other supports for students, such as advising, tutoring, child care, and transportation. Researchers found that students in the program, compared with basic skills students not in the program, were more likely to continue into credit-bearing coursework and to gain credits that count toward a college credential.[27]

Contextualized instruction, another recommended practice, helps make skills and content meaningful to students by teaching them within the context of real-life situations and practical problem solving. Contextualized teaching has been found to improve student learning of subject-matter content.[28]

In order to address the challenge of encouraging student success in entry-level gatekeeper courses, colleges must first encourage students to enroll in these courses. A study in Virginia found that students who enrolled in gatekeeper courses had a reasonably high degree of success. Similar patterns held whether students were pursuing core academic or CTE programs; these findings are consistent with the findings from Achieving the Dream.[29] However, many students who complete developmental education sequences opt out of taking the gatekeeper courses that provide transfer-level college credit in a program of study. In one study, 62 percent of students who completed developmental English enrolled in gatekeeper English courses, and 36 percent who completed developmental mathematics enrolled in gatekeeper mathematics courses. Among students who had enrolled in developmental education, those who started at the lowest levels were much less likely to enroll in a gatekeeper course than were those who started at the highest level or those who did not take developmental education. The researchers concluded that a key challenge is motivating students to enroll in gatekeeper courses in the first place.[30]

Colleges are also working to improve instruction and pedagogy in developmental education and entry-level courses. Through a project called Strengthening Pre-Collegiate Education in Community Colleges (SPECC), the Carnegie Foundation for the Advancement of Teaching has examined how participating colleges in California used both traditional and innovative measures of student performance to assess and collect data to enhance student learning and improve pedagogy. Innovative strategies used in the project included using common assessments and common pre- and post-testing across courses to inform faculty inquiry

and discussion; faculty inquiry groups that met regularly to discuss instruction and learning; and analyses of assessment, grading, and attrition in order to better understand impediments to learning and progress.[31]

Additionally, education technology companies are developing strategies for helping students move through developmental education more quickly and effectively. Some of this work is focused on developing software for diagnostic testing to identify students' strengths and weaknesses, and then providing tutorials and modules that are adapted to students' specific needs.[32] Through this model, colleges may be able to provide some individualized and targeted instruction without the increased costs normally associated with such individualization. It is likely that these technologies can supplement — but certainly not replace — one-on-one interaction with faculty, counselors, and others, particularly for low-income, nontraditional students. Thus, these opportunities may provide some flexibility for colleges, in relation to both developmental education and, eventually, entry-level courses. More detailed information about integrating student support services with academic and CTE programs is included in the discussion of the following stage.

Making Progress in a Program of Study
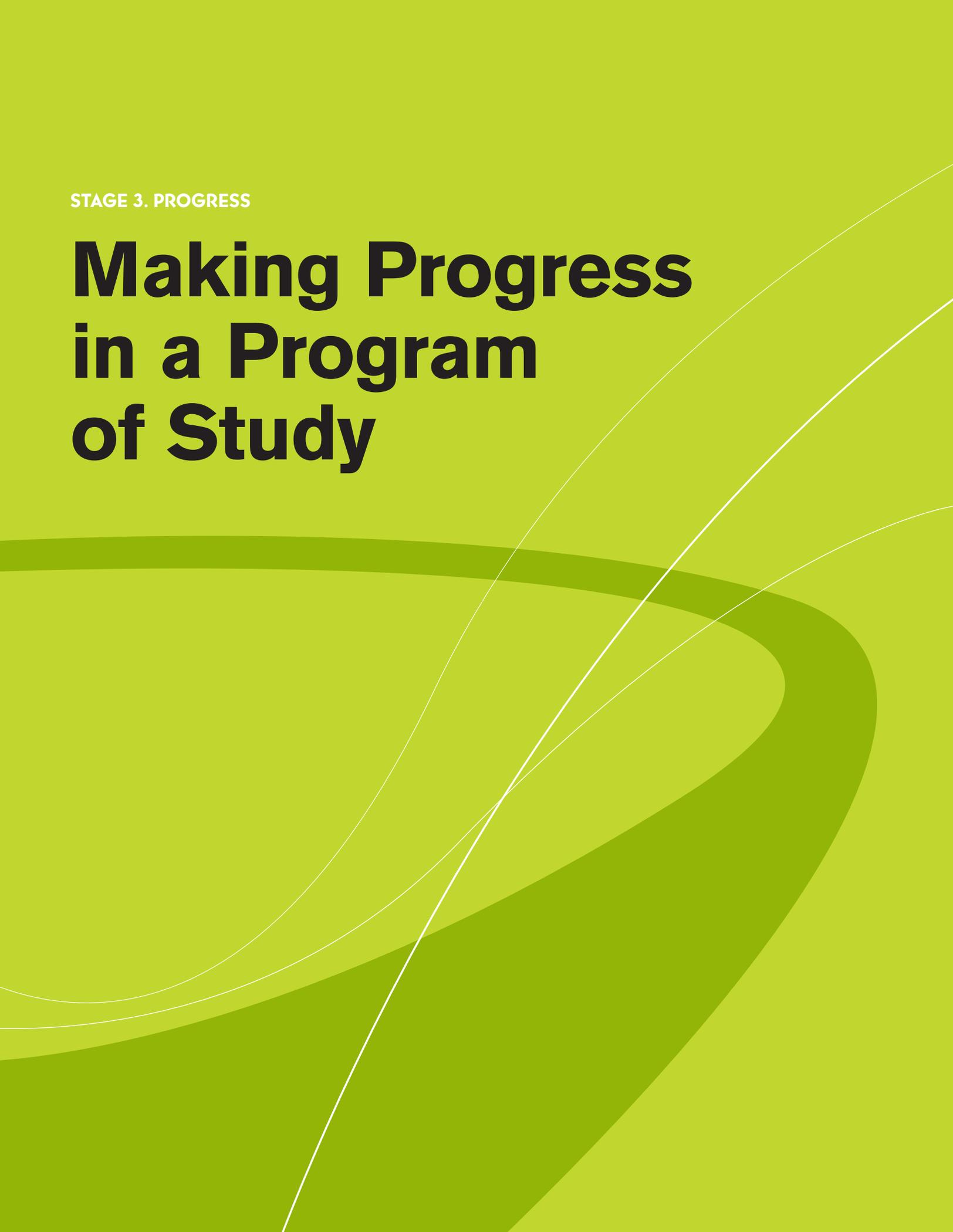
FRAMING QUESTION FOR PROGRESS: Which student supports, incentives, and requirements encourage students to remain engaged and to make progress in a program of study?

CONNECTION	ENTRY	PROGRESS	COMPLETION
From interest until application	From enrollment until completion of gatekeeper courses	From entry into program of study until completion of 75% of requirements	From completion of program of study until credential with labor-market value

Students need assistance in making consistent progress toward their completion goals. A combination of student supports, financial and other incentives, targeted pedagogical approaches, and timely feedback to students can help to ensure that students make adequate progress.

Many colleges have a large number of student support programs; these programs are often not well coordinated with each other or with academic and CTE programs. A comprehensive and coordinated system of targeted supports needs to be available to students, particularly at key loss and momentum points, from first contact until completion of a certificate or degree. The range of student needs is expansive, including child care, transportation, financial aid, assessment and placement, advising, student success courses, tutoring, individualized instruction, learning assistance centers, career counseling, and job placement.[33] The resulting challenges that colleges face are substantial, including determining which services are most critical for various groups of low-income, nontraditional students; which services should be available at which points in student progression toward completion; how services should be integrated with developmental education and with academic and CTE programs; and which services should be high-touch versus low-touch.

Since the research findings about how best to address these challenges are limited, representatives from participating colleges will need to consult with colleagues and experts, draw from their own experience and context, and innovate, including using incentives to encourage students to reach key milestones.

The following questions may inform redesign efforts in this area:

- To what extent are student support services, from tutoring to academic counseling, integrated or closely aligned with instruction at our college? Which instructional supports are mandatory as part of entry-level coursework for all students, or for some students?

- How does our college determine if students need instructional supports, counseling, or other interventions that can help them succeed, both in coursework and in progress toward a certificate or degree? What kinds of alerts and interventions are offered when students are not on track?

- How are adjustments in students' education plans made to accommodate changes in students' goals over time?

- How can academic and CTE program review processes be used to improve the coherence of course sequences leading to certificates and degrees? What pedagogical and curricular changes need to be implemented to improve student success? What professional development might be necessary to facilitate these processes of change?

- For students who have successfully entered a program of study, how can our college accelerate the rate of program completion? For example, how does our college track and advise program majors to ensure that they are making progress toward completion?

- Does our college use financial or other incentives to encourage students to:
  - enroll directly from high school?
  - enter into a program of study?
  - make progress in that program of study?
  - enroll in and complete gatekeeper classes?
  - enroll continuously?
  - enroll full time?
  - not withdraw from classes?
  - enroll in the next course in a sequence?
  - graduate?

Examples of community college practices related to this area:

Students need access to a wide range of academic advising, education planning, and instructional supports throughout their college experience. In terms of non-academic supports, a recent study found that student outcomes can be improved when support programs incorporate one or more of the following elements: help in creating social relationships; help in clarifying aspirations and enhancing commitment; help in developing college know-how; and help in providing supports — such as child care, health care, and financial assistance — that help students stay enrolled in college.[34]

However, the mere availability of support systems is not sufficient; support systems need to be aligned both with one another and with instruction. Colleges in Florida were better able to promote student success when they had specific student support systems in place — including in-depth orientations, proactive advising, early warning systems, and well-organized academic support — that were aligned and coordinated across the campus to meet student needs.[35]

Ideally, students interested in or already enrolled in a program of study would have access to program-specific academic counselors who are responsible for interacting with students to ensure that they are making progress toward their education goals.[36] Students can also benefit from online interactive opportunities to track their progress on their education plan, upload portfolio materials and other documents, and see how their credits would transfer to four-year colleges or universities. Colleges can provide automatic notifications or "early warnings" to students, including through text messages or social networking. These communications can inform counselors and instructors of student progress or setbacks, and can inform students of mandatory or optional interventions, instructional supports, and deadlines, including deadlines for financial aid.

In the area of instructional supports, colleges are also working to integrate student assistance with developmental education sequences and with entry-level courses in core academic and CTE subjects. For example, Chaffey College in California has substantially reorganized its instructional support services into Success Centers designed to serve all students and faculty and to be integrated with instructional curriculum, so that the classroom, rather than the tutoring center, is the key point of access for students.[37] Another example is the FastStart program at the Community College of Denver, which accelerates developmental education sequences in mathematics and English, links those curricula to entry-level college courses, and incorporates student support services within the instructional program. FastStart students enroll in a one-credit course that emphasizes education and career planning and provides opportunities for tutoring, academic supports, and

career counseling. To promote student engagement, FastStart instructors use contextualized instruction, as well as interactive learning and collaborative group activities, in their courses. The program provides a learning community for students as well as study groups that meet one hour per week. FastStart faculty engage in a learning community of their own, with regular professional development activities for FastStart faculty as a whole, as well as for groups of faculty teaching in each content area. Researchers examining the accelerated mathematics sequence found that students participating in the program outperformed the general remedial mathematics student population on various progression measures, including passing the developmental sequence and passing the entry-level mathematics course.[38]

Many colleges are also working to help students address the challenges they face outside of college. To that end, colleges can provide on-campus child care, flexible scheduling, emergency financial aid, student health insurance, and other supports. Financial need is one of the most common reasons for students being unable to complete their intended college path. To address this issue, colleges might consider offering financial and other incentives for students to remain enrolled full time and stay on track. Some community colleges have offered supplemental financial aid

to reward students for persisting; that strategy has met with some success. Two colleges in New Orleans offered students $1,000 for enrolling in each of two semesters ($2,000 total) if the students met two conditions: They had to enroll in college at least half-time, and they had to maintain an average grade of C or better. The awards were distributed in three separate payments upon completion of performance requirements during each semester. A research team from MDRC found that the supplemental aid encouraged more students to register for college, increased student persistence, increased the number of credits students earned, and had a positive impact on a range of students' psychological and social issues.[39]

Finally, colleges should not overlook the importance of having a positive and welcoming campus climate for all students, including students of color and others who have traditionally not performed well in postsecondary education.[40] Some strategies that colleges can use to help build a more welcoming campus climate include providing tailored opportunities for men of color to build social connections with other students, faculty, and staff; conducting intrusive forms of counseling and advising to reach students who might not seek help on their own; and fostering open dialogues about such important issues as race and gender.[41]

CONNECTION		ENTRY		PROGRESS		COMPLETION
From interest until application	▶	From enrollment until completion of gatekeeper courses	▶	From entry into program of study until completion of 75% of requirements	▶	From completion of program of study until credential with labor-market value

Many community college students need help tracking progress toward their education goals, adjusting their goals over time if needed, and recognizing when they have fallen behind and need assistance. Seeing steady progress toward goals — for example, through online tracking of their credits earned and frequent messaging about each milestone they meet — can help motivate students to stay engaged in college. The range of supports colleges can offer includes ongoing career, education, and financial planning, tracking of academic status and credits, portfolio development, early alerts for key supports, transfer planning, and job searches. Some of these supports need to be provided to students face-to-face (for example, updating their education and career goals), but many can be provided primarily online, with additional face-to-face support as needed.

It is also important to ensure that students are obtaining the critical knowledge and skills that they will need to be successful when they leave community college, whether they go on to further education, to a career, or to both. Identifying the specific learning outcomes expected of students at each step along a program of study can clarify for students the skills they need and why they need them. Assessments, student portfolios, and work experience can be linked to these outcomes. The overall aim is to award credits based on the knowledge and skills of students rather than on time spent in a classroom. Identification of student learning outcomes can also assist in program restructuring efforts, by helping to clarify the key intermediate objectives for student learning throughout a course sequence that leads to a credential.

The following questions may inform redesign efforts in this area:

- Does our college monitor student progress to determine whether students are staying on track in their programs and heading toward completion? For example, does our college track college-level credit thresholds (such as 12, 24, 30, 36, 48, and 60 credits earned) and recognize students for reaching these milestones?

- Does our college have online tools — in a dashboard format, for example — to help students monitor their own progress? If so, do these tools target information to students based on milestones reached or not reached by specific dates?

- Does our college target supports at students in college-level programs of study who start to fall off track?

- Does our college monitor student learning? If so, how does it use that information? Has our college identified key student learning outcomes for the core courses in each major program of study?

- Does our college offer interventions for students who are not learning expected materials?

- Does our college offer sufficient courses and sections to meet student demand? Are they offered at convenient times based on students' needs?

- Does our college offer credit for internships, apprenticeships, and other workforce-related opportunities? Does our college offer credit for work and other life experience?

- Does our college monitor the total number of students enrolled at each identified stage of the loss and momentum framework, the number of students who complete each stage, and the number of students who successfully transition to the next stage?[42] If so, how does our college use that information to support student progression and completion?

Examples of community college practices related to this area:

One of the most widely recognized efforts to engage students in planning and tracking their progress toward their own education and career goals can be found in the LifeMap at Valencia College in Florida. The LifeMap is a planning process, developed to increase student persistence and completion, through which Valencia students identify and seek to achieve their education and career goals.[43] Based on the college's advising model, the LifeMap uses a student-centered and interactive approach to link students with faculty, other students, and college professionals, to help them "identify, clarify, and realize their personal, academic, career, and life goals." Students can use a handbook, an online planning tool, and campus resources (such as faculty and counselors) to develop their goals and to select courses and schedules that fulfill those goals.

For each of the five stages outlined by the college, the Valencia website provides students with links to the different programs and services that can support them in that specific area, as well as success indicators that allow students to check their progress at each point. The five stages are:

1. The *college transition* stage focuses on pre-college preparation and readiness.
2. The *introduction to college* stage is focused on students' first 15 credit hours and assisting students in developing career and life goals, making curricular choices based on those goals, and bolstering academic skills as needed.
3. The *progression to degree* stage is the time when students earn the credits necessary for their chosen education path, or adjust their paths as needed.
4. The *graduation transition* stage is about making plans for transfer or employment.
5. The *lifelong learning* stage provides information to students about continually evaluating options, goals, and capabilities through various forms of postsecondary education over the course of their lives.[44]

The LifeMap model is one example of a coherent set of practices focused on helping students design a path to completion from the very start of their college career.

There is little research available on successful community college efforts to measure common student learning outcomes at key points within education programs or upon completion of programs. However, many colleges require the identification of expected student learning outcomes for each course. In addition, there have recently been some efforts, including those at the League for Innovation in the Community College, to understand and to begin to assess "deeper learning" — that is, the critical thinking skills and academic knowledge that students need for success in ongoing postsecondary education and in careers that pay high enough wages to support a family.[45]

In its most recent report, the Center for Community College Student Engagement argues that efforts to promote deeper student learning should be part of the effort to improve college completion.[46] The center identifies four strategies for developing more interactive classroom experiences in order to generate deeper levels of student learning and, ultimately, higher student completion rates: (1) strengthening student engagement in the classroom; (2) expanding professional development to focus on how to improve student engagement; (3) integrating student supports into the learning experience; and (4) focusing institutional policies on engagement.
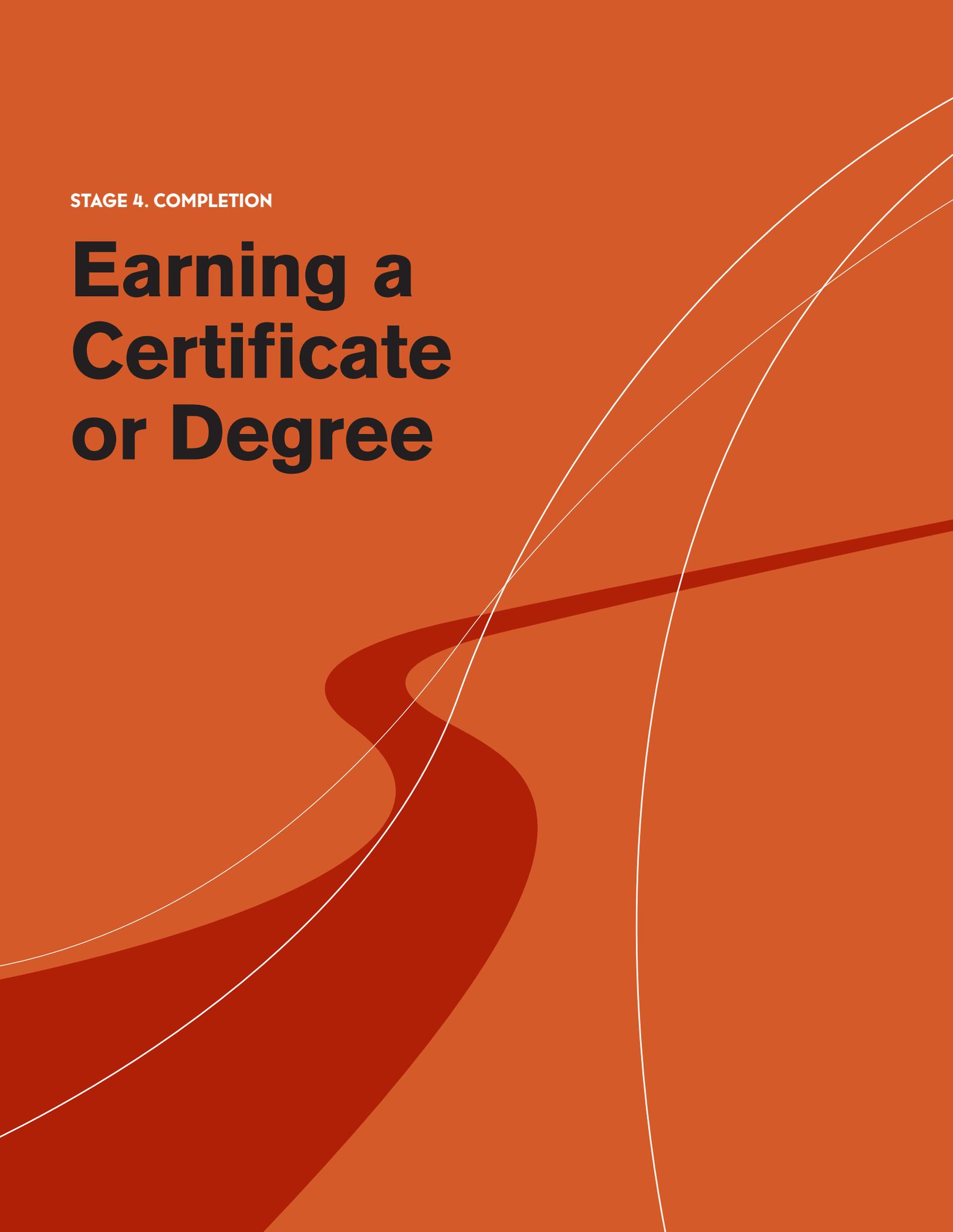
Earning a Certificate or Degree

FRAMING QUESTIONS FOR COMPLETION: What incentives and supports encourage students to complete their programs, transfer, and/or attain employment related to their education? What barriers to completion can be eliminated?

CONNECTION		ENTRY		PROGRESS		COMPLETION
From interest until application	▶	From enrollment until completion of gatekeeper courses	▶	From entry into program of study until completion of 75% of requirements	▶	From completion of program of study until credential with labor-market value

Colleges can assist students at the final stages of earning a certificate or degree by continuing to provide integrated instruction, supports, and incentives for timely completion of students' college-level programs of study. It is equally important for colleges to ensure that their systems, policies, and practices do not impose barriers that discourage student completion. Colleges can conduct a process audit to understand and assess the effectiveness of the processes students experience, such as orientation and matriculation, financial aid, assessment, placement, and counseling.[47]

It is likely that successfully moving more students through this final stage requires incentives, supports for transition, career planning, strong relationships with area employers and four-year postsecondary partners, and feedback to students regarding progress and completion status. Research related to this stage is very limited; consequently, the work done by colleges in the Completion by Design initiative will be important in informing the field about the most effective ways to help students in the last phase of completing a certificate or degree.

The following questions may inform redesign efforts in this area:

- At our college, which course sequences for certificates explicitly build toward a degree? Which ones do not? How are students informed about which course sequences do and do not build toward a degree?

- How and when do students find out if they have a particular curricular gap that must be filled in order to graduate? What kinds of counseling services are available to students as they near completion?

- Is financial aid available to students who are close to completion and in good standing academically, but who might drop out without financial assistance?

- Does our college assess whether students are mastering the skills and knowledge each of the programs seeks to teach? If so, how does our college use those data?

- What kinds of programs and services are available to students to help them prepare to transfer? How do students learn about those programs and services? What percentage of students who are eligible for those programs and services use them?

- Does our college have articulation agreements with nearby and online four-year colleges and universities regarding transfer of credits?

- What kinds of programs and services are available to students to help them prepare to enter the workforce? How do students learn about those programs and services? What percentage of the students who are eligible for those programs and services use them?

- Has our college engaged with workforce representatives to assess whether our graduates have the

knowledge and skills necessary to succeed in their chosen career paths?

- Has our college engaged with faculty from nearby four-year postsecondary institutions to assess whether our students have the knowledge and skills necessary to succeed when they transfer? Do we receive information from four-year institutions about our former students' course-taking patterns, grades, and completion rates?

- What feedback does our college receive from graduates that specifically relates to the preparation they received in their program of study?

Examples of community college practices related to this area:

Most of the documented work that focuses on the final stages of helping students complete their credentials discusses efforts to simplify processes in order to raise completion rates. For example, some colleges are revamping their graduation requirements to eliminate such potential impediments as students having to apply or pay for graduation. Many community college students who plan to transfer and obtain a bachelor's degree opt not to receive their associate's degree, seeing no need for it, but if a student transfers to a four-year institution and does not subsequently earn a bachelor's degree, he or she could end up with no degree at all after years of college. Hoping to prevent this outcome, some colleges are improving their notification processes to ensure that students are aware of when they have met the requirements for an associate's degree, and then automatically awarding that degree rather than waiting for eligible students to apply for it.

Many colleges are also now identifying former students who left college without a degree but who were very close to meeting degree requirements; these colleges then notify these individuals (via regular mail, email, text message, or social

networking sites) of how close they are to attaining a degree. Project Win-Win, which includes 35 community colleges in Louisiana, Missouri, New York, Ohio, Virginia, and Wisconsin, focuses on (1) finding former students whose credits qualify them for associate's degrees and awarding the degrees retroactively; and (2) finding former students who are a few credits from earning an associate's degree and seeking to bring them back to college to complete their degree.[48]

Similarly, some institutions are providing opportunities for "reverse credentialing." This process, designed for community college students who transfer to a four-year institution before completing the coursework for an associate's degree, allows students to obtain their associate's degree once they have earned the required credits, even if some of those credits were earned at the four-year institution to which they transferred. Through this process, students who may not complete their bachelor's degree will still have a postsecondary degree.

Many community colleges have engaged in partnerships and articulation agreements with four-year institutions in order to improve transferability of credits for their students. However, partnerships and agreements are not sufficient to encourage students to transfer in high numbers. Studies suggest that students can be encouraged to transfer when community colleges and local universities share a "transfer-going culture," with a common academic language and common expectations. When this culture exists, it informs course curricula and helps prepare and motivate students to attend four-year programs.[49] Other factors, such as aligned student supports, are also likely to be important for achieving high rates of transfer.

Likewise, strong partnerships with businesses are important for informing community college programs — and college faculty, staff, and administrators — about changes in labor market trends and about employer expectations for college graduates. Many colleges try to provide students with access

to work-based learning opportunities that can help build the skills students will need to succeed in the workforce. Successful work-based learning programs tend to be learner-centered, but with employers and education institutions collaborating to develop curricula and facilitate learning.[50] Industry advisory groups can also be helpful in developing work-based learning programs.

In addition, some colleges use "learn-and-earn" programs to help move students toward completion. These programs combine career-oriented academic curricula with relevant work experience and financial assistance to allow students to both learn (in the classroom and the workplace) and earn (through financial aid, wages, or other supports) in order to stay in school and complete an academic program. A recent analysis identified four pillars of effective learn-and-earn programs: academic rigor; relevant work experience; funding to support the programs (including funding for financial assistance to students); and strategic alignment, which keeps the students engaged in learning and keeps the stakeholders (colleges and workplaces) invested in its outcomes. Supporting these pillars are four organizing principles required for program development: accountability, career exploration, professional development, and the offering of credentials. The authors of the study suggest that adherence to these pillars and principles can help new learn-and-earn models adapt to changing conditions in the education and workplace environments.[51]

Conclusion

Completion by Design, an initiative sponsored by the Bill & Melinda Gates Foundation, seeks to raise community college completion rates while containing college costs, maintaining open access, and ensuring the quality of college programs and credentials. This is a broad goal that has the potential to improve the education and career opportunities of students across the United States. It is also a complex and challenging endeavor that requires substantial commitment by participating colleges to engage in systematic redesign of all programs and practices to focus on student completion. The main purpose of this planning tool is to provide community colleges with information and context that can assist them in this effort, so as to help them generate productive conversations directed toward substantial change. As the initiative evolves, this tool will be updated and augmented to reflect the feedback and direction of the colleges — and to add to the field's knowledge base, so that all colleges have access to information and strategies that may help them in improving student completion.

Endnotes

[1] Jenkins, D. (2011). *Get with the program: Accelerating community college students' entry into and completion of programs of study.* New York: Community College Research Center (CCRC).

[2] Venezia, A., Bracco, K. R., & Nodine, T. (2010). *One-shot deal? Students' perceptions of assessment and course placement in California's community colleges.* San Francisco, CA: WestEd.

[3] Cabrera, A., et al. (2006). Increasing the college preparedness of at-risk students. *Journal of Latinos in Education*, *5*(2) 79–97.

[4] A wide range of research concerning college preparation has shown the importance of these kinds of efforts to improve transitions between high school and college, including Venezia, A., Kirst, M., & Antonio, A. (2003). *Betraying the college dream.* Stanford, CA: Stanford Institute for Higher Education Research; Venezia, Bracco, & Nodine, op. cit.

[5] Jenkins, op. cit.

[6] El Paso Collaborative for Academic Excellence. (2009). *About the work*. Retrieved from http://epcae.org/work.htm.

[7] Florida Department of Education. (2010). *Florida rolls out nation's first Common Core based readiness test.* Retrieved from http://www.fldoe.org/news/2010/2010_10_28-2.asp. Texas is adopting a K–12 end-of-course assessment system, the State of Texas Assessments of Academic Readiness (STAAR), which includes college and career readiness components (Texas Education Agency. [2009]. *Transition plan for House Bill 3* [chapter 3]. Austin, TX: Author. Retrieved from http://www.tea.state.tx.us/student.assessment/hb3plan/).

[8] CSU/UC Mathematics Diagnostic Testing Project. (2010). *MDTP K–12 Computer Delivered Testing via Daskala.* Retrieved from http://mdtp.ucsd.edu.

[9] Boroch, D., & Hope, L. (2009). *Effective practices for promoting the transition of high school students to college: A review of literature with implications for California community college practitioners.* Berkeley, CA: RP Group, Center for Student Success.

[10] The California State University. (2011). *Expository Reading and Writing Course.* Retrieved from http://www.calstate.edu/eap/englishcourse.

[11] Hughes, K. L., Karp, M., Fermin, B., & Bailey, T. (2005). *Pathways to college access and success*. Washington, DC: U.S. Department of Education, Department of Adult and Vocational Education.

[12] Boroch & Hope, op cit.

[13] Rosenbaum, J. E., Deil-Amen, R., & Person, A. E. (2006). *After admission: From college access to college success*. New York: Russell Sage Foundation; Jenkins, op. cit.

[14] Zeidenberg, M., Jenkins, D., & Calcagano, J. C. (2007). *Do student success courses actually help community college students succeed?* New York: CCRC.

[15] Cho, S.-W. (2010, May). *Student success courses and education outcomes in Virginia community colleges.* Presentation at the annual meeting of the American Educational Research Association, Denver, CO. Retrieved from http://ccrc.tc.columbia.edu/Presentation.asp?uid=281.

[16] Bailey, T., Jeong, D., & Cho, S.-W. (2010). *Student progression through developmental sequences in community colleges.* New York: CCRC; EdSource. (2010). *Something's got to give: California can't improve college completions without rethinking developmental education at its community colleges.* Sacramento, CA: California Community Colleges Chancellor's Office; Bailey, T. (2009). *Rethinking developmental education in the community college.* New York: CCRC.

[17] See, for example, The City University of New York. (2008). *A new community college concept paper.* New York: Author.

[18] Richburg-Hayes, L., et al. (2009). *Rewarding persistence: Effects of a performance-based scholarship program for low-income parents.* Oakland, CA: MDRC. Retrieved from http://ies.ed.gov/ncee/wwc/publications/quickreviews/qrreport.aspx?qrid=108.

[19] Rutschow, E. Z., et al. (2011). *Turning the tide: Five years of achieving the dream in community colleges.* Oakland, CA: MDRC; Jenkins, op. cit.

[20] For the Completion by Design initiative, "student entry into a college-level program of study" is defined as taking and passing at least nine college-level semester credits in a program of study.

[21] For related analysis in the K–12 sector, see Newmann, F. M., Smith, B., Allensworth, E., & Bryk, A. S. (2001). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis, 23*(4), 299; and Bryk, A. S., et al. (2010). *Organizing schools for improvement: Lessons from Chicago.* Chicago: University of Chicago Press.

[22] Many of the questions on developmental education are adapted from Boylan, H. R. (2002). *What works: Research-based best practices in developmental education.* Boone, NC: National Center for Developmental Education.

[23] Boylan, op. cit.

[24] Edgecomb, N. (2011). *Accelerating the academic achievement of students referred to developmental education.* New York: CCRC; Roksa, J., et al. (2009). *Strategies for promoting gatekeeper course success among students needing remediation: Research report for the Virginia Community College System.* New York: CCRC.

[25] Baker, E. (2010, December). *Increasing postsecondary success: Lessons from community college innovations.* Presentation at the American Youth Policy Forum, Washington, DC; Jenkins, D., et al. (2010). *A model for accelerating academic success of community college English students: Is the Accelerated Learning Program (ALP) effective and affordable?* New York: CCRC; Zoltners Sherer, J., & Grunow, A. (2010). *90-day cycle: Exploration of math intensives as a strategy to move more community college students out of developmental math courses.* Stanford, CA: Carnegie Foundation for the Advancement of Teaching.

[26] Community College of Baltimore County. (2011). *Accelerated Learning Project.* Retrieved from http://faculty.ccbcmd.edu/~padams/ALP/indexa.html; Jenkins et al., op. cit.

[27] Washington State Board for Community and Technical Colleges. (2006). *Integrated Basic Education and Skills Training (I-BEST).* Retrieved from http://www.sbctc.ctc.edu/college/e_integratedbasiceducationandskillstraining.aspx; Zeidenberg, M., et al. (2010). *Washington state's Integrated Basic Education and Skills Training program (I-BEST): New evidence of effectiveness.* New York: CCRC; Jenkins, et al. (2009). *Building bridges to postsecondary training for low skill adults: Outcomes of Washington state's I-BEST program.* New York: CCRC.

[28] Baker, E. D., et al. (2009). *Contextualized teaching and learning: A promising approach for basic skills instruction.* Berkeley, CA: RP Group; Perin, D., & Hare, R. (2010). *A contextualized reading-writing intervention for community college students.* New York: CCRC.

[29] Bailey, T., Jeong, D. W., & Cho, S.-W. (2009). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review, 29*(2), 255–270.

[30] Jenkins, D., Jaggars, S., & Roksa, J. (2009). *Promoting gatekeeper course success among community college students needing remediation: Findings and recommendations from a Virginia study.* New York: CCRC.

[31] Bond, L. (2009). *Toward informative assessment and a culture of evidence: A different way to think about developmental education.* Stanford, CA: Carnegie Foundation for the Advancement of Teaching.

[32] See Kolowich, S. (2011, March 10). Adapting to Developmental eEd., *Inside Higher Ed.* Retrieved from http://www.insidehighered.com/news/2011/03/10/

companies_look_to_improve_developmental_and_remedial_education_products_using_adaptive_learning_technology.

[33] See, for example, Boylan, op. cit.

[34] Karp, M. (2011). *Toward a new understanding of non-academic student support: Four mechanisms encouraging positive student outcomes in the community college.* New York: CCRC.

[35] Jenkins, D. (2006). *What community college policies and practices are effective in promoting student success? A study of high and low impact institutions.* New York: CCRC.

[36] Jenkins (2011), op. cit.

[37] Hope, L. (2001, February). *Basic skills across the curriculum.* Presentation at the Student Success Institute, sponsored by the Academic Senate for California Community Colleges, San Jose, CA. Retrieved from http://asccc.org/sites/default/files/Final%20General%20Session%20PT4.ppt

[38] Bragg, D. D., Baker, E. D., & Puryear, M. (2010). *2010 follow-up of Community College of Denver FastStart program.* Champaign, IL: University of Illinois, Office of Community College Research and Leadership.

[39] MDRC. (2011). *Performance-based scholarship demonstration.* Retrieved from http://www.mdrc.org/project_31_91.html

[40] Hurtado, S., Milem, J. F., Clayton-Pedersen, A., & Allen, W. (1999). *Enacting diverse learning environments: Improving the climate for racial/ethnic diversity in higher education.* San Francisco, CA: Jossey-Bass; Bush, E. C., & Bush, L. (2010). Calling out the elephant: An examination of African American male achievement in community colleges. *Journal of African American Males in Education, 1*(1), 40–62.

[41] Gardenhire-Crooks, A., et al. (2010). *Terms of engagement: Men of color discuss their experiences in community colleges.* New York: MDRC.

[42] Ewell, P. (2008). *Advancing adults into community college programs: Data tools from* Breaking Through. Boston, MA: Jobs for the Future.

[43] Valencia College. (2011). *LifeMap.* Retrieved from http://www.valenciacollege.edu/lifemap.

[44] Grubb, N. (2009). *The money myth: School resources, outcomes, and equity.* New York: Russell Sage Foundation.

[45] Dailey, B. (2011). *Creating significant deep learning experiences.* Retrieved from http://www.league.org/iStreamSite/content/ppt/INV2011/S121.pdf; Dailey, B. (2011). *Creating significant deep learning experiences.* Phoenix, AZ: League for Innovation in the Community College.

[46] Center for Community College Student Engagement. (2010). *The heart of student success: Teaching, learning and college completion.* Austin, TX: University of Texas Community College Leadership Program.

[47] E. Baker (personal communication, July 1, 2011).

[48] Institute for Higher Education Policy. (2010). *Project Win-Win.* Retrieved from http://www.ihep.org/projectwin-win.cfm.

[49] Handel, S. J., & Herrera, A. (2006, June). *Pursuing higher education access and achievement: Case studies in the development of "transfer-going" cultures.* Presentation at the Jack Kent Cooke Foundation National Forum, Washington, DC.

[50] Jobs for the Future. (2009). *The Jobs to Careers Work-Based Learning Self Assessment Tool.* Boston, MA: Author.

[51] Gardner, P. D., & Bartkus, K. R. (2010). *An analysis of U.S. learn-and-earn programs.* East Lansing, MI: Collegiate Employment Research Institute. Retrieved from http://www.ceri.msu.edu/home/attachment/an-analysis-of-u-s-learn-and-earn-programs/