



Introduction to the CCRC Assessment of Evidence Series

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Community colleges play an important role in the U.S. economy, providing access to higher education for low-income young people, a path to higher-earning employment for low-income workers, and a supply of well-trained employees for local industry. In order to remain competitive with other major economies, however, the U.S. must sharply increase its supply of educated workers over the coming decade. Accordingly, policymakers and private foundations have set ambitious goals for improving the rate at which Americans earn college credentials. To meet these goals, community colleges will have to increase both the number of students they serve and the rate at which those students graduate.

Improving student graduation rates will not be an easy task, particularly for community colleges, which disproportionately serve low-income, first-generation, and academically underprepared students. These students struggle with a variety of challenges, including job and child care responsibilities, transportation difficulties, financial limitations, poor high school academic preparation, and a lack of information about how to successfully navigate college. The goal of the *CCRC Assessment of Evidence Series* is to help community colleges identify concrete strategies that have the potential to improve student success on a scale needed to meet national goals for increased postsecondary attainment.

Across the first year of a major grant from the Bill & Melinda Gates Foundation, and with supplemental funding from Lumina Foundation for Education, the Community College Research Center has gathered and synthesized a large body of research evidence regarding strategies that may improve the success of students who attend community college. Working papers in the *CCRC Assessment of Evidence Series* use the research literature to draw conclusions and provide concrete evidence-based recommendations to practitioners, policymakers, and researchers in eight major topic areas:

- **Developmental Assessment and Placement:** Noting the widely shared view that assessment of all incoming students is crucial, Katherine Hughes and Judith Scott-Clayton argue that there is growing support for mandatory testing and placement and state-wide standardization. Nevertheless, some empirical evidence suggests that current assessment

approaches do not lead to better student outcomes. The authors discuss emerging directions for reform, including more diagnostic and holistic assessments.

- **Developmental Acceleration:** Nikki Edgecombe argues that although empirical evidence regarding student outcomes is limited, strategies to accelerate student progress through developmental education, including course restructuring and mainstreaming, show promise. She also discusses implications of the finding that most acceleration models involve alterations to courses or curriculum but pay little attention to pedagogical practices.
- **Developmental Mathematics Pedagogy:** After examining six types of pedagogical reforms in mathematics, Michelle Hodara concludes that the evidence most strongly supports the effectiveness of two particular approaches—structured forms of student collaboration, and instruction that focuses on problem representation.
- **Contextualization of Basic Skills Instruction:** Dolores Perin finds that although the evidence is only suggestive at this time, contextualization is a promising direction for speeding up the progress of academically underprepared college students.
- **Online Learning:** Shanna Jaggars concludes that while online learning affords flexibility and convenience, students also encounter challenges in online coursework that contribute to low completion rates among community college students. She provides recommendations to improve online learning access and success rates.
- **Non-Academic Support:** Melinda Mechur Karp argues that effective non-academic services achieve results through four specific mechanisms: creating social relationships, clarifying aspirations and commitment, developing college know-how, and addressing conflicting demands of work, family, and college. She discusses theoretical and empirical support for each mechanism as well as implications for college practice.
- **Institutional and Program Structure:** Judith Scott-Clayton concludes that complex policies and structures of community colleges often confuse students and lead to decisions about whether and how to persist toward a credential that may waste time and resources and reduce the chances of successful outcomes. She also highlights several promising programs and suggests directions for future experimentation and research.
- **Organizational Improvement:** Davis Jenkins argues that in order to increase rates of student completion on a large scale, community colleges will have to make fundamental changes in the way they operate. Based on practices found to be effective among a broad range of high-performance organizations, he outlines practical steps community colleges can take to bring about continuous improvement in student learning and progression.

In this introduction to the series, we describe our approach in reviewing the literature and discuss the primary theme of *organizational redesign* that weaves through each of the eight working papers.

Approach to the Literature

For each topic, we searched for relevant research literature in academic databases¹ and on academic and research-oriented websites² using a set of key search terms. We reviewed the abstracts of all papers matching the key search terms to determine whether the paper met the inclusion criteria for that topic. Inclusion criteria varied slightly across topics, depending on the topic scope and the quality of relevant literature. For example, most of the papers in the series examine research published since 1990. For the online learning topic, however, the marked change in online technology and usage around the turn of the 21st century led us to believe that research published prior to 2000 was likely to be dated and less relevant; accordingly, we included only research published since 2000. In some topic areas, the research literature was rather scant, and thus we included research from all educational sectors or even from outside the educational arena; in other topic areas, the research literature was abundant, and we were able to limit our scope to the postsecondary setting. Finally, some topic areas had very few high-quality research studies, and thus we included all relevant research, while putting a heavier emphasis on the findings of the high-quality studies; other topic areas had a larger volume of high-quality research, allowing us to discard uncontrolled or descriptive studies and focus on the best-quality research.

Despite variations in inclusion criteria, each working paper takes a similar approach to the judgment of study quality. In general, we classified studies as:

- *Qualitative*: The study did not provide a quantitative estimate of a particular treatment effect, but did provide other information useful for understanding the context of the problem and possible solutions.
- *Low Quality*: The study focused only on treatment participants (for example, their growth over time) without comparing them to those who did not receive treatment. Or it attempted to compare outcomes between those who received treatment and those who did not, but the two groups were non-equivalent. For example, in many studies across the literatures, student participation in a given treatment was

¹ Databases included EBSCO's Academic Search Premier, Professional Development Collection, and Education Research Complete; Education Full Text (Wilson); ERIC; JSTOR; Proquest Digital Dissertations; Social Sciences Citation Index; Google Scholar; and other databases specific to the given topic. For each topic, we also conducted a manual search of pertinent peer-reviewed journals, and searched the reference sections of previous reviews or other key influential papers.

² Across all topics, we searched the Institute of Education Sciences website and 19 additional websites belonging to community college organizations, education-oriented research centers, and education-focused foundations. For particular topic areas, we also searched additional research and academically oriented websites relevant to the topic.

voluntary, and no attempt was made to measure or control for pre-existing differences between volunteers and non-volunteers.

- *Better Quality*: The study compared outcomes between those who received treatment and those who did not. While groups were neither randomized nor perfectly comparable at the outset, the authors attempted to statistically control for observable differences between the groups (using, for example, regressions controlling for multiple covariates). Or the study relied on some known source of variation in treatment status that is plausibly unrelated to individual participation decisions (for example, regression continuity designs). Randomized studies with obvious flaws (for example, failing to control for differential attrition) also generally fell into this category.
- *Randomized*: The study explicitly randomized students into treatment and control groups, allowing a clean and clear measurement of the treatment effect. It is important to note that randomized studies are often conducted with small and sometimes unrepresentative sets of students. Accordingly, their results cannot always be generalized to a larger population of interest.

We used our judgment of study quality to assess the nature and strength of the research evidence within each topic area. Based on that assessment, we reached conclusions and recommendations using a variety of sources, including qualitative and survey research, the theoretical literature, and practitioner input. Further input from experts in each field as well as from our research advisory panel of community college leaders and researchers³ helped us refine and extend recommendations in an attempt to make them concrete and practical.

³ We extend many thanks and appreciation to our Bill & Melinda Gates Foundation grant advisory board: Thomas Brock, Director, Young Adults and Postsecondary Education Policy, MDRC; Anthony Bryk, President, The Carnegie Foundation for the Advancement of Teaching; W. Norton Grubb, David Pierpont Gardner Professor in Higher Education, University of California at Berkeley Graduate School of Education; James Jacobs, President, Macomb Community College; Robert Johnstone, Dean of Planning, Research, and Institutional Effectiveness, Skyline College; Henry Levin, William H. Kilpatrick Professor of Economics and Education, Teachers College, Columbia University; Bridget Terry Long, Professor of Education and Economics, Harvard Graduate School of Education; Kay McClenney, Director, Center for Community College Student Engagement; Donna McKusick, Dean of Developmental Education and Special Academic Programs, Community College of Baltimore County; Scott Ralls, President, North Carolina Community College System; Daniel Solorzano, Professor of Social Science and Comparative Education and Director of UC/ACCORD, University of California, Los Angeles; Karen Stout, President, Montgomery County Community College; Susan Wood, Vice Chancellor, Academic Services and Research, Virginia Community College System; and Holly Zanville, Senior Program Director, Lumina Foundation for Education.

Major Theme: Organizational Redesign

In his paper on organizational improvement and college redesign, Jenkins argues that in order to improve, colleges need to move beyond implementation of small-scale programs by cultivating a college culture that encourages and sustains wide-scale institutional reform. In our initial conceptualization of this series, we approached this area as one important stand-alone topic. Over time, however, we came to realize that organizational redesign is a theme that is integral to all eight papers. To substantially improve developmental education, online and face-to-face pedagogy, or academic and non-academic support services, the entire institution must be involved with and committed to fundamental change and improvement. Moreover, no single strategy in isolation will increase student success rates on a substantial scale; rather, strategies must work together in concert across an institution. Keeping these principles in mind, the papers in the series highlight specific ways that college processes and services can be re-designed to improve student success. Overall, the papers in this series build the foundation for four broad recommendations:

(1) Colleges should work to simplify the structures and bureaucracies that students must navigate.

To the incoming community college student, college represents a confusing and complex tangle of restrictions, recommendations, and requirements. Some rules and practices are in place because they support student success, but others are in place due to tradition, convenience, or inertia. For example:

- Hughes and Scott-Clayton's working paper on developmental education placement testing notes that almost all community colleges use commercially developed tests as the primary metric for placement of students into developmental education, despite the fact that these exams do not support colleges' efforts to provide appropriate programming and services to academically underprepared students. While they are convenient mechanisms for screening, these tests represent a barrier to student progression, and they provide little diagnostic information for students or faculty members concerning the particular problems individual students face and must overcome.
- In her working paper on institutional and program structure, Scott-Clayton cites a variety of common policies that may confuse students or inadvertently hinder their progression. For example, in some community colleges, a portion of noncredit programming is quite similar to credit programs in curriculum and quality, and may cost as much or even more per term, but if a noncredit student decides to switch to an academic program, the courses he or she has already taken are not applicable toward an academic credential.
- Registration and financial aid processes can be extraordinarily and unnecessarily frustrating. Anecdotally, a president of one college recently discovered that many of his students waited at the financial aid office for

over an hour to reach the front of the line, only to be told they needed to return after filling out a necessary form. (The college now has a staff member meet students as they walk in the door to ensure they have the proper forms *before* entering the line.)

- Most community colleges offer an impressive array of academic programs, but many do not clearly map out their offerings in a way that makes it clear to students, particularly those who lack clear goals for college and careers, what the employment and further education goals particular programs are designed to lead to, and how students can successfully navigate program requirements to complete as quickly as possible.

Such policies and practices create unnecessary obstacles to student success. For how many new students, many of whom are balancing complex work and family lives, might these bureaucratic barriers constitute the “last straw” that encourages them to walk away from college entirely? Colleges need to re-examine policies, practices, and services, to ensure that they are all aligned with the goal of student success. To do this, Jenkins recommends that colleges form cross-functional committees or task forces of faculty, student services staff, and administrators to map out the experience of students from the time they first make contact with the college, examine the interactions between students and college programs and services at each point along this “pathway,” and assess the extent to which college policies and practices help or hinder students from making progress toward successful completion.

(2) Broad engagement of all faculty should become the foundation for policies and practices to increase student success. This should include active faculty involvement in student support activities.

Jenkins highlights that a variety of research on effective organizations across multiple fields converges in a clear consensus that substantial organizational improvement is unlikely to occur without strong employee involvement. Considering these findings in light of the decentralized nature of authority in community colleges, it is clear that colleges cannot enact systematic reforms from the top down; faculty and staff must be motivated participants in efforts to improve organizational effectiveness.

Several papers in this series join in the conclusion that student support structures should be integrated into students’ daily academic experience, which would require active faculty involvement in support activities. One clear explanation for this is that, for many reasons, students who need supports may never seek them out. Students may not think they need help; they may not know the services exist; they may think college-provided services will not be useful; they may feel intimidated about approaching others for help; they may be confused about how to find or use the service; or they may feel that using the support would flag them as being unworthy, unintelligent, or “not college material.”

In her paper on online learning, Jaggars points out that many student services are offered only on the physical campus; she argues that online students are much more likely to use these services if the supports are integrated into activities in the online course itself. Similarly, in her paper on what makes non-academic supports effective, Karp recommends that colleges include non-academic support activities into the overall curriculum through student success courses and activities in academic courses. She notes, for example, that “math faculty might find ways to use the FAFSA in their courses to help students learn math skills while also being exposed to the financial aid process. By integrating non-academic supports into the ‘regular’ curriculum, students will not need to seek out such supports and are more likely to encounter them on a regular basis.” To incorporate such activities into the curriculum, faculty support is critical.

It is important to recognize, as Jenkins points out, that previous attempts to engage faculty in improvement efforts have not always fared well. Perhaps these efforts have been stymied by a focus on student retention and completion, which are measures of *institutional* effectiveness, rather than by a focus on student learning, which is a measure of *instructional* effectiveness. To engage faculty, colleges may need to empower them to establish common learning outcomes and assessments for academic programs, as discussed further below.

(3) Colleges should be encouraged to align course curricula, define common learning outcomes and assessments, and set high standards for those outcomes.

Based on his review of research on K-12 school improvement, Jenkins finds that schools that are effective in serving educationally disadvantaged students are characterized by “instructional program coherence,” meaning that courses and teaching are guided by a common instructional framework, with clearly defined learning outcomes and integrated assessment and academic supports. Community college programs are often weak in this regard. For example, developmental education courses are meant to prepare students for college-level math and English courses; they thereby prepare students to succeed in college-level work more generally. However, the material covered in developmental courses is often misaligned with the skills necessary to succeed in college-level courses (a topic of ongoing CCRC research). In her paper on developmental education acceleration, Edgecombe notes that many acceleration programs have taken aim at this problem—they are designed to improve student success by eliminating redundant or misaligned material within a given program’s curriculum.

Faculty within individual departments need to work together to make the goals of instruction explicit, providing a basis on which to measure actual learning outcomes and assess the quality of instruction. Popular performance metrics, such as course grades or student evaluations, tend to be inconsistent within and across instructors over time. Learning outcomes, on the other hand, are defined by faculty involved in course design and instruction, are measured consistently across all sections of a course (and can often double as the course’s common final exam or project), and can build across courses toward overall program learning outcomes. As Perin points out in her working paper on contextualization of basic skills, the process of defining course learning outcomes can

also help faculty from different disciplines communicate and align expectations across courses in terms of key reading, writing, and math skills. Moreover, learning outcomes can serve as the basis for a peer-review-driven continuous quality improvement process within individual departments and across the institution (see below). In her paper on online learning, Jaggars argues that now is an excellent time to introduce such a process into online learning programs. Given the relatively new environment of online learning, online programs might afford colleges an opportunity to implement continuous improvement in a context that may be more open to innovation than is the relatively traditional environment of face-to-face learning.

(4) Colleges should collect and use data to inform a continuous improvement process.

Using measurement and evidence to inform management decisions is a central feature of effective organizational improvement models outside of education. It is likewise a key part of K-12 school reform efforts and a primary tenet of college improvement models such as Achieving the Dream and the Academic Quality Improvement Program. Such models emphasize that major improvements to a system can best be achieved through a process of examining key outcomes, enacting policies that attempt to improve those outcomes, and re-examining outcomes, in a continuous cycle.

Yet, as Jenkins notes in his paper, a national survey of community college institutional research practices found that top administrators generally do not use data on student outcomes for decision making. In fact, community colleges often allocate limited resources for institutional research; many treat it as an administrative function that is not central to the management of the college. Perhaps this should not surprise. Given that college funding is based on enrollments rather than outcomes, there are few incentives for college leaders to focus on the latter. States can motivate colleges to move toward data-informed decision making by tracking student attainment of intermediate and completion milestones, engaging colleges throughout the state to examine the data, supporting efforts by colleges to use their own data to improve programs and services, and creating policy incentives for systemic reforms.

Jenkins's paper also outlines a five-step continuous improvement process (employing measures of student learning and progression) that colleges can follow as part of an overall effort to redesign themselves for improved student completion. Each of the other papers in this series includes recommendations for specific actions colleges can take to improve student success at each stage of students' experience in college.

As noted below, Jenkins' paper on organizational improvement, Scott-Clayton's paper on student navigation of institutional and program structure, and Jaggars' paper on online learning are now available. Other working papers will appear in the coming weeks. All papers may be downloaded from the CCRC website (<http://ccrc.tc.columbia.edu>) as they are released.

Working Papers in the Series

Edgecombe, N. (2011, forthcoming). *Accelerating the academic achievement of students referred to developmental education: A review of the evidence* (CCRC Working Paper, Assessment of Evidence Series). Anticipated release: March 2011.

Hodara, M. (2011, forthcoming). *Reforming mathematics classroom pedagogy: Evidence-based findings and recommendations for the developmental math classroom* (CCRC Working Paper, Assessment of Evidence Series). Anticipated release: February 2011.

Hughes, K. & Scott-Clayton, J. (2011, forthcoming). *Assessing developmental assessment in community colleges* (CCRC Working Paper, Assessment of Evidence Series). Anticipated release: February 2011.

[Jaggars, S. S. \(2011\). *Online learning: Does it help low-income and underprepared students?* \(CCRC Working Paper No. 26, Assessment of Evidence Series\).](#) A Brief of this paper will also be made available.

[Jenkins, D. \(2011\). *Redesigning community colleges for completion: Lessons from research on high-performance organizations* \(CCRC Working Paper No. 24, Assessment of Evidence Series\).](#) A [Brief](#) of this paper is also available.

Karp, M. M. (2011, forthcoming). *Toward a new understanding of non-academic student support: Four mechanisms encouraging positive student outcomes in the community college* (CCRC Working Paper, Assessment of Evidence Series). Anticipated release: February 2011.

Perin, D. (2011, forthcoming) *Facilitating student achievement through contextualization* (CCRC Working Paper, Assessment of Evidence Series). Anticipated release: February 2011.

[Scott-Clayton, J. \(2011\). *The shapeless river: Does a lack of structure inhibit students' progress at community colleges?* \(CCRC Working Paper No. 25, Assessment of Evidence Series\).](#) A [Brief](#) of this paper is also available.