CCRC COMMUNITY COLLEGE RESEARCH CENTER

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

What Really Works in Student Success?

Elisabeth A. Barnett
Elizabeth Kopko

June 2020

CCRC Working Paper No. 121

Address correspondence to:

Elisabeth A. Barnett
Senior Research Scholar
Community College Research Centr
Teachers College, Columbia University
525 West 120th Street, Box 174
New York, NY 10027
212-678-3091
Email: barnett@tc.edu

This paper is based on a forthcoming chapter in *Student Success in the Community College: What Really Works?* edited by Terry U. O'Banion and Maggie Culp, to be published by Rowman & Littlefield. The book will be available for purchase from Rowman & Littlefield at 800-462-6420 or www.rowman.com. It will also be available for purchase from Amazon, Barnes & Noble, and other booksellers.

Abstract

Community college students invest considerable time and money into attending college, but too few of them complete their programs of study. This paper discusses how the development of an overall framing vision for student success, the implementation of evidence-based practices, and the establishment of a culture that is both committed to student success and conducive to innovation are useful, complementary approaches that colleges can pursue to improve student outcomes.

Table of Contents

> Decades of evidence and experience demonstrate that similar groups of students at similar colleges achieve different outcomes, and those differences correlate to community college and university practice and leadership. While many institutions of higher learning are working hard to improve student success, most could do better.
>
> – Aspen Institute (n.d.)

1. Introduction

Colleges exist primarily to offer students opportunities to learn and complete meaningful credentials, so that they can start the rest of their lives well prepared. As college becomes more expensive and students arrive with more varied backgrounds and needs, many community colleges are thinking hard about how to increase student success.

The focus, often due to the expectations of non-institutional stakeholders (state policymakers, trustees, parents), is on the completion of credentials. And there are good reasons for this. Students who complete a bachelor's degree earn 71 percent more over a lifetime, on average, than high school graduates, while those with an associate degree earn 32 percent more (Carnevale, Rose, & Cheah, 2014). At the same time, students, educators, and policymakers are deeply concerned with student learning. The point of becoming an educated person is to master knowledge and skills that will be used in the workplace and in life. While not a major focus of this paper, we consider student success to encompass learning as well as the completion of degrees and other credentials.

Community college students invest considerable time and money into attending college, yet only a relatively small proportion complete their programs—about two fifths of students earn a degree or certificate within six years (Shapiro, Ryu, Huie, Liu, & Zheng, 2019). This is a lost opportunity for these students; it also reflects poorly on colleges.

But how is it possible to increase the likelihood that students—and institutions—will be successful? This paper discusses three ways that this can be accomplished:

- Development of an overall framing vision for student success.
- Implementation of evidence-based practices.

- Development of a culture committed to student success and conducive to innovation.

These are not mutually exclusive approaches. Indeed, the ideal is for a college to implement evidence-based practices within an overall framework that is focused on student success, supported by a positive culture. However, this paper will discuss each dimension separately.

Table 1
Practices that Work

What Works	Examples
A Framing Vision	• Guided Pathways • Complete College America's Game Changers • Accelerated Study in Associate Programs (ASAP)
Evidence-Based Practices	Connection • Dual enrollment • Early college high schools • Transition courses Entry • Refined assessment and placement practices • Accelerated developmental education • Student success courses • Early advising Progression • Clearly defined program pathways • 15 to Finish strategies • Increased student connections to college Completion • Active and experiential learning • Transfer pathways
Student-Focused Culture	• Supportive organizational culture • Culture that meets the needs of diverse students

2. A Framing Vision

Increasingly, college leaders are concluding that it is time to address the problem of low graduation rates. In the past, improving access to college was the priority; more recently, the focus has been on completion (Bailey, Jaggars, & Jenkins, 2015). However, improving completion rates is a complex undertaking. Most often, colleges have approached this goal by developing programs intended to support students facing different kinds of barriers. For example, concerns about students' academic struggles are addressed by establishing tutoring centers. Students who would have been placed

unnecessarily into remedial courses are helped by placing them using multiple measures. Or programs offering bus passes or child care help students with financial need. Some of these individual programs and practices are described in the next section.

However, over the past two decades, college leaders have become increasingly aware that individual programs are not enough to improve completion rates because they do not sufficiently change the student experience. For example, a study of summer bridge programs in Texas found initial positive results, but they were not sustained in students' later semesters (Barnett, Bork, Mayer, Pretlow, Wathington, & Weiss, 2012). Also of concern is that more complex initiatives such as TRIO programs are unable to improve the success of the overall college population if they only reach small numbers of students. For example, an evaluation of the original *Achieving the Dream: Community Colleges Count* initiative, which aspired to be a comprehensive college reform effort, found that the majority of students on most participating campuses were not affected by the initiative (Rutschow et al., 2011).

This has led to increased interest in reorganizing the student experience in ways that (1) are comprehensive enough to change how students progress through their education, and (2) affect most students in a college, or at least most of those deemed in need of assistance to be successful. Three examples of college-wide or large-scale approaches are Guided pathways, Complete College America's Game Changers, and Accelerated Study in Associate Programs (ASAP). While only the last of these has been rigorously evaluated, they all incorporate evidence-based practices that are intended to ensure that any given student will have a well-organized, supported educational experience.

Guided Pathways is an approach in use by over 300 community colleges in the United States to frame their student success efforts. It incorporates a set of core principles and activities, such as the use of meta-majors, program mapping, and enhanced advising, but can also include components considered important locally. Research conducted at Cuyahoga Community College in Ohio and San Jacinto College in Texas found that both used Guided Pathways as a way of organizing and aligning their student success initiatives at each stage of students' progression through college (Jenkins, Lahr, Brown, & Mazzariello, 2019). An important—and unique—aspect of Guided Pathways is the

creation of a framing vision around student progression; colleges are asked to consider students' trajectories from entry to completion and think about how to map and refine each piece of the journey.

While Guided Pathways is a relatively new approach, there is emerging evidence that it can contribute to student success. In recent research, students enrolled in Guided Pathways institutions in Tennessee were found to have improved on several key indicators beginning in the year following implementation of key elements of the Guided Pathways initiative (Jenkins, Brown, Fink, Lahr, & Yanagiura, 2018). These included math pathways; required corequisite math, writing, and reading; and redesigned new student advising. When compared with students enrolled in 2014 (before implementation), students enrolled in 2016 (after implementation) earned an average of 2 additional college credits per year, were 17 percentage points more likely to complete a college-level math course in the first year, and 11 percentage points more likely to complete college-level English.

Complete College America was founded in 2009 as an initiative that encourages allied states and colleges[1] to engage in six "game-changing" practices that lead to better college completion rates. These include a "15 to Finish" approach in which students are encouraged to take 15 credits per semester, as well as the use of math pathways, corequisite support, academic program maps, and proactive advising. It also includes taking steps to have students complete a set of key benchmarks in their first year in college. While there is not clear evidence that this set of six practices will result in better student outcomes, there is rigorous evidence that a number of them are effective individually (see below); together they have the potential to achieve a greater impact.

Accelerated Study in Associate Programs (ASAP) was first developed by the City University of New York and then replicated in three Ohio colleges. While not offered to every student in implementing colleges, ASAP is a comprehensive program that provides participating students with up to three years of academic and social supports (advising, tutoring, and career services) along with financial aid. The students commit to studying full-time while in the program and engaging in program activities such as

[1] Thirty-seven states and several other entities per the Complete College America website (March, 2020).

advising and a student success course. An evaluation found that students in this program were almost twice as likely to graduate in three years, with positive results for students who entered college with developmental needs as well as those who were academically college-ready (Miller, Headlam, Manno, & Cullinan, 2020). While the program in Ohio cost $5,521 per student over three years, the cost per degree awarded was 22 percent lower than among students who did not participate in the program.

In sum, having a framing vision can drive a college's student success effort forward. Instead of scattered programs and a mix of better and worse systems and practices, colleges have an integrated approach to moving forward. So why is this not always done? First, it can be a big lift, affecting many parts of a college and changing the lives of staff and faculty. It can be difficult to mobilize all of the people who will be needed to effect the necessary changes. Second, some are concerned that these approaches limit students' options and ability to change direction as they discover new interests or mature. However, there is a growing consensus that effective change management entails the development of a unified framing vision to integrate individual reform efforts and make a real difference in students' lives.

3. Evidence-Based Programs and Practices

Within a framing vision, the specific student experiences that are offered should be evidence based. The following practices have been rigorously evaluated and shown to positively impact the probability of success among community college students. These practices are organized below using Completion by Design's Loss/Momentum framework (2013),[2] which focuses on four distinct phases of students' educational life: (1) connection, (2) entry, (3) progression, and (4) completion. Students interact with the institution at numerous points during each phase and each interaction can serve to facilitate or hinder students' momentum toward their postsecondary goals.

[2] For the full Preventing Loss, Creating Momentum Framework, visit https://www.achievingthedream.org/resource/15146/loss-momentum-framework-revised.

3.1 Connection

The connection phase of the student experience is defined as starting when students first take active steps toward enrolling in college and ending when they have completed their application process. Their decisions during this phase can be informed by a variety of factors, including their interactions with postsecondary institutions. The following practices during the connection phase have been shown to positively influence student success.

Dual enrollment. Common barriers to college access and degree attainment include low levels of self-efficacy, which is defined as a student's perception of her ability to complete the tasks needed to achieve a personal goal (Bandura, 1997). Research has shown a strong correlation between postsecondary success and self-efficacy (Gore, 2006; Vuong, Brown-Welty, & Tracz, 2010; Zajacova, Lynch, & Espenshade, 2005). First-generation students, in particular, commonly possess and enter college with lower levels of academic self-efficacy (Darling & Smith, 2007). A lack of social and academic preparation for entry into and persistence through college-level courses and the overall cost of college attendance are also common barriers, particularly among the traditionally underserved students who typically attend community colleges.

Dual enrollment courses allow high school students to earn college-level credits while attending high school. Credits earned through these courses count toward both high school graduation and college degree requirements at no or low cost. Exposure to and successful completion of college-level work during high school can reduce anxiety about college work (Soto, 2012) and prepare students for the academic and behavioral expectations of college (Karp & Jeong, 2008; Lerner & Brand, 2006). Indeed, research has shown that dual enrollment courses positively affect a variety of postsecondary outcomes, including college access and enrollment, college persistence and credit accumulation, and college degree attainment (An, 2013; Giani, Alexander, & Reyes, 2014; Struhl & Vargas, 2012).

Early college high schools. Similar to dual enrollment programs, early college high schools provide students with an opportunity to participate in college-level work while still in high school, thereby increasing students' familiarity with and exposure to postsecondary education. Early college high schools offer an integrated curriculum and

full schedule of courses that satisfy both high school and college requirements, allowing students to earn up to two years' worth of transferrable credits or even an associate degree while providing extensive student supports. Experimental evidence on the impact on student success indicates that students who participate in early college high schools are more likely than their peers to (1) be college-ready by the time of high school graduation, (2) enroll in a two-year (or four-year) institution, and (3) earn an associate degree (Berger, Garet, Hoshen, Knudson, & Turk-Biacakci, 2013; Berger, Turk-Biacakci, Garet, Knudson, & Hoshen, 2014; Edmunds, Unlu, Glennie, Bernstein, Fesler, Furey, & Arshavsky, 2017).

Transition courses. Access to dual enrollment and early college high school programs is typically limited to relatively high-performing high school students who meet college-readiness standards. However, according to the National Assessment of Educational Progress, only 25 percent of high school seniors receive proficient scores in math and 27 percent do so in writing.[3] Thus, it is not surprising that about two-thirds of community college students enroll in one or more developmental courses before beginning college-level work (Chen, 2016), involving a substantial investment of limited time and money.

Transition courses offer a potential solution to the low levels of academic readiness observed among community college students by helping students address skill deficiencies while still in high school. These courses are typically offered in the 12th grade and complement the traditional high school math or English curriculum. In many cases, they allow students to place directly into college-level courses after successful completion. Research suggests that transition courses can improve students' performances on placement tests and lead to higher rates of proficiency in both math and English (Barnett, Fay, Pheatt, & Trimble, 2016; Fong, Finkelstein, Jaeger, Diaz, & Broek, 2015; Kane, Boatman, Kozakowski, Bennett, Hitch, & Weisenfeld, 2018; Mokher, Leeds, & Harris, 2018; Trimble, Pheatt, Papikyan, & Barnett, 2017; Venezia & Voloch, 2012).

[3] For more information on the NAEP, visit https://www.nationsreportcard.gov/#.

3.2 Entry

The entry phase of the student experience lasts from enrollment through completion of initial college-level (gatekeeper) courses. For the majority of community college students, this stage includes time spent in developmental courses that must, in many cases, be completed before students are permitted to enroll in credit-bearing classes that count toward their degree. The following practices take place during the entry phase and have been shown to positively influence student success.

Refined assessment and placement practices. Placement testing has become a near-universal part of the enrollment experience for incoming community college students (Bailey, Jaggars, & Jenkins, 2015). Most students who participate in remediation are directed into those courses due to scores they earn on standardized placement tests, such as the ACCUPLACER. However, research indicates that placement systems that rely exclusively on standardized test scores frequently misplace students. Most importantly, some students assigned to remediation would likely pass a college-level course in the subject area if given the opportunity (Belfield & Crosta, 2012; Scott-Clayton, 2012; Scott-Clayton, Crosta, & Belfield, 2014).

As a result, colleges are increasingly turning to multiple measures placement systems. Under this approach, colleges consider a variety of measures that have been linked to student outcomes, including high school GPA and indicators of socio-emotional learning and other non-cognitive attributes (Bahr, Fagioli, & Hetts, 2019; Belfield & Crosta, 2012; Lipnevich, MacCann, & Roberts, 2013; Scott-Clayton, 2012; Scott-Clayton, Crosta, & Belfield, 2014). Although there is no single correct way to implement multiple measures, emerging experimental research supports the use of multiple measures as a means to achieve more accurate placements and increase college-level placement and completion of math and English gatekeeper courses (Barnett, Bergman, Kopko, Reddy, Belfield, & Roy, 2018; Cullinan, Barnett, Kopko, Lopez, & Morton, 2019).

Accelerated developmental education. Research generally suggests that the traditional prerequisite model of remediation does not work as intended. Many students who begin in developmental coursework never go on to complete college-level coursework and earn a college credential (Bailey, 2009; Calcagno & Long, 2008; Chen, 2016; Martorell & McFarlin, 2011; Xu, 2016).

Among the most promising approaches to reforming developmental education have been acceleration strategies aimed at reducing the time a student must spend completing prerequisite work before being permitted to enroll in college-level courses. Research suggests that simply shortening the number of courses in developmental education sequences can increase student success. Accelerated course designs are positively associated with the completion of gatekeeper courses and higher rates of credit accumulation, transfer, and degree attainment (Edgecombe, Jaggars, Xu, & Barragan, 2014; Hayward & Willett, 2014; Sheldon & Durdella, 2010).

Corequisite courses are one way to accelerate students' entry into college-level coursework. Under the corequisite model, students who are not college-ready take college-level courses with additional learning support aligned with the course content. This design reduces opportunities for students to exit college between initial enrollment and the completion of the gateway course (Bailey, Jeong, & Cho, 2010), and increases academic momentum towards completion through the accumulation of credits early on (Wang, 2017). Research suggests that the corequisite model not only improves early academic outcomes such as college-level course completion, persistence, and credit accumulation, but also can lead to longer-term success, including increased probability of transfer and graduation (Boatman, 2012; Cho, Kopko, Jenkins, & Jaggars, 2012; Jenkins, Speroni, Belfield, Jaggars, & Edgecombe, 2010; Logue, Watanabe-Rose, & Douglas, 2016; Logue, Douglas, & Watanabe-Rose, 2019; Ran & Lin, 2019).

Student success courses. Students, especially those from groups underrepresented in college, also need to be equipped with the skills to navigate the procedural and cultural demands of college. Student success courses, typically taken during the first semester of college, are designed to help students understand campus policies and services, develop noncognitive skills and behaviors such as time management and effective study habits, and undertake academic and career planning. Studies reveal promising results including positive impacts on short-term academic outcomes such as increased credit accumulation and higher rates of persistence into the second year (Cho & Karp, 2012; Weiss, Brock, Sommo, Rudd, & Turner, 2011).

Early advising. Community college students are likely to encounter multiple barriers to persistence, including financial hardship, competing family and work

demands, and struggles with academic performance. And these obstacles may more easily discourage students who are not committed to a specific educational goal (Grubb, 2006). Interventions that seek to clarify students' aspirations and help them create plans for achieving their goals can increase the likelihood that students will complete a credential. Research suggests that students who engage with advisors during their first weeks of enrollment are more likely to persist, particularly when the students do not enter college with a specific academic plan (Hatch & Garcia, 2017). Such interventions mitigate a lack of information about options and provide students with a clear path forward (Karp, 2011).

Importantly, effective advising relationships are sustained over time. These ongoing interactions can keep students on track toward their goals, allow them to modify plans as necessary, and help them overcome obstacles along the way (Karp, 2011). Indeed, experimental evidence suggests that intrusive one-on-one advising can be particularly effective at increasing persistence and other measures of success (Bettinger & Baker, 2014).

3.3 Progression

The majority of the student experience takes place within the progression phase. Students enter this phase after completing initial gatekeeper courses and remain until they are in their final semester of college. During this period, students must develop and sustain a long-term commitment to their educational goals. The following practices have been shown to positively influence student success during this phase.

Clearly defined program pathways. In order to make meaningful progress toward degree completion, students must understand the steps needed to complete their credential. Qualitative research suggests that many students lack necessary information about program requirements and are frequently confused about which courses to take (Grubb, 2006; Kadlec & Gupta, 2014; Nodine, Jaeger, Venezia, & Bracco, 2012; Rosenbaum, Deil-Amen, & Person, 2006). As a result, many students spend money unnecessarily by accumulating credits in excess of degree requirements and choosing courses that do not apply to their degree program or that do not facilitate transfer to a four-year institution (Auguste, Cota, Jayaram, & Laboissière, 2010; Grubb, 2006; Hodara & Rodríguez, 2013; Zeidenberg, 2012).

Efforts to clarify and simplify pathways and streamline course sequencing can help minimize errors and lessen frustration (Deil-Amen & Rosenbaum, 2003; Scott-Clayton, 2011; Van Noy, Weiss, Jenkins, Barnett, & Wachen, 2012). Clear and deliberate pathways can be particularly informative when aligned with career and further education goals (Bailey, Jaggars, & Jenkins, 2015). Emerging research suggests that default term-by-term sequences of courses for each program of study known as program maps decrease the accumulation of credits not required for completion (Baker, 2016; Jaggars & Fletcher, 2014; Rosenbaum, Deil-Amen, & Person, 2006).

15 to finish. This is shorthand for a national effort to encourage students to enroll in at least 15 credits per semester, the number needed to complete a typical 60-credit course of study in two years. According to research summarized by Complete College America (2017), students who take at least 30 credits in their first year are more likely to graduate on time. Less-prepared students and working students, who are sometimes advised to take fewer credits, also benefit from enrolling in 15 or more credits per semester if they can do so.

Increased student connections to college. Strong social relationships with faculty and peers can foster student success. These relationships provide students with increased access to information and resources and a sense of belonging that facilitates college persistence and improves labor market outcomes (Schreiner, 2013; E. Smith, 2010). However, low-income students, who are disproportionately represented at community colleges, often report difficulty forming social bonds with peers, faculty, and staff (Bailey, Jenkins, & Leinbach, 2005; Mayhew, Rockenbach, Bowman, Seifert, Wolniak, Pascarella, & Terenzini, 2016).

Learning communities provide a cohort experience among a small group of students who take at least two linked courses together in the same term. In many cases, students also receive additional supports such as increased advising or tutoring. The specific classes that are linked vary from college to college and can include college-level or developmental courses, student success and orientation courses, and other program-specific courses. Learning communities have been found to increase credits earned in the targeted subject, overall credit accumulation, and degree completion (Scrivener & Weiss,

2013; Sommo, Mayer, Rudd, & Cullinan, 2012; Visher, Schneider, Wathington, & Collado, 2010, 2012; Visher & Teres, 2011).

A similar approach is used in Integrated Basic Education and Skills Training (I-BEST), a nationally known program in which cohorts of students are team-taught by basic skills and occupational instructors as they work toward completion of workforce credentials. An experimental evaluation of I-BEST in three colleges in Washington State found that the program had positive impacts. Participating students earned an average of 13 more college credits than control group students and were 32 percentage points more likely to receive a credential in a 24-month period (Glosser, Martinson, Cho, & Gardiner, 2018).

Another approach to connecting students to the college involves engaging faculty and other college staff in reaching out to students to "validate" them (Rendon, 1994). Validation by faculty involves helping students feel recognized and respected by learning their names, meeting with them individually to get to know them as people, and constructing course syllabi that make class expectations transparent. Barnett (2011) conducted research that found that students who were validated by college faculty were more likely to persist in college.

3.4 Completion

The completion phase encompasses the final steps of the student experience, wherein students complete all institutional and program requirements and either transition into the labor market or advance into subsequent postsecondary programs. During this period, students finish any remaining coursework, navigate institutional processes for graduation and transfer, and identify and secure employment matched to their degree. The following practices take place during the completion phase and have been shown to positively influence student success.

Active and experiential learning. Evidence supports the relationship between active and experiential learning opportunities and improved student outcomes, including student engagement, course grades, credential completion, and labor market placement, both in the community college context and more broadly across postsecondary sectors (Callanan & Benzing, 2004; Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt, & Wenderoth, 2014; Kuh, 1995; Terenzini, Pascarella, & Blimling, 1999; Walker, 2019).

Importantly, minority students who traditionally have not had access to such programs, as well as those students aspiring to enter nontraditional occupations may benefit the most from such experiences (Cantor, 1995).

Experiential learning opportunities can play a key role in preparing students for direct entry into the labor market following graduation from a community college. Internships, practicums, and other field-based learning experiences can be an effective way to help students learn about a target occupation, develop the skills that are important to prospective employers, and provide opportunities for employer-student engagement (Ambrose & Poklop, 2015; Council for Adult and Experiential Learning, 2018).

Transfer pathways. Community college often serves as an initial step in a student's pathway toward a bachelor's degree, particularly among low-income and minority students (Bailey, Jenkins, & Leinbach, 2005; Ignash & Townsend, 2000). Yet, the transfer process may pose a significant barrier to bachelor's degree completion (Velez, 1985). Transfer between two- and four-year institutions is often complicated by credit loss or a lack of curricular coherence (Bailey, 2003; Dougherty, 1994; McCormick, 2003).

To ameliorate this, there has been an increase in the number of structured transfer pathways in many states, enabling associate degree-holding community college students to transfer into a bachelor-degree program with junior standing (Anderson, 2018; M. Smith, 2010). Formal agreements between two- and four-year institutions create more well-defined transfer pathways that align program course requirements across postsecondary sectors. Although causal research is limited, evidence supports the use of such policies to increase the rate of transfer and bachelor's degree attainment (Baker, 2016).

4. Developing a Student-Focused Culture

There is a widespread belief among educators that implementation of policies and programs that increase student success is much more likely when the institutional culture supports such efforts. There are many ways to think about the enhancement of college culture, but this section focuses on two overlapping but separate approaches: (1) the

creation of a supportive organizational culture, and (2) ensuring that the college culture meets the needs of diverse students, especially those traditionally underserved in college.

Supportive organizational culture. Lakos and Amos (2004) suggest that without understanding organizational culture, initiatives will fail or even lead to negative consequences. They define culture as "the values, beliefs, and assumptions that, over time, become shared and taken for granted through a continuous, collaborative learning and influencing process. Culture determines attitudes and patterns of thought about what is important and what must be done" (p. 348).

However, organizational culture change is challenging and multi-faceted (Schein, 2004). In her book entitled *How Colleges Change*, Kezar (2014) describes the institutional context of colleges as a loosely connected bureaucracy, involving multiple power and authority structures. She frames this as "collegial organized anarchy." The implication is that multiple people and offices within the campus context must be considered and engaged for successful culture change to occur. She emphasizes the need for colleges to undergo a process in which they mobilize for action based on an analysis of student data, choose and implement strategies, and develop systems to structure and sustain the changes made.

The types of cultural change that may be needed to enhance student success have been studied by a range of scholars including Fullan (2006), Kezar (2014), Schien (2004), Tierney and Lanford (2016), and Toma (2010). Based on their conceptualizations, the Community College Research Center is studying ways that cultural changes in four arenas may contribute to student success:

- *Structures or systems*, including streamlining and clarifying processes, ensuring that policies support the institutional mission, using data effectively, and developing appropriate skills and infrastructure.
- *Attitudinal changes*, including prioritizing student needs and developing a sense of urgency in undertaking meaningful, institution-wide reform.
- *Improved relationships*, including the development of greater trust among college staff, faculty, and students.
- *Capacity building* through practice effecting change that leads to the development of knowledge and skills in this arena.

In some colleges, culture change may be seen as a precursor to other reforms. For example, at Linn-Benton Community College in Oregon, the college began implementation of Guided Pathways by undertaking culture change. In a study of the college, researchers noted that Linn-Benton "took a grassroots approach to guided pathways implementation, allowing ample time for faculty and staff to exercise their creativity in deciding how to tailor the guided pathways model to reflect the college's assets and priorities. Leaders sought to ensure the college community viewed guided pathways not as a project but as a cultural transformation, with its president observing that 'if you change the culture, the systems will follow.'" (Community College Research Center, n.d.).

Meeting the needs of diverse students. Kezar (2019) encourages colleges to begin their efforts to improve student success with an examination of unconscious assumptions and biases among college staff at all levels, leading to shared responsibility for creating an environment in which students feel supported. She asserts that colleges were not set up to do a good job of serving traditionally underrepresented student groups and recommends that "senior administrators routinely examine key institutional policies [and] change the ones that create barriers—such as those related to admissions criteria, student advising, curriculum, staff hiring criteria, and faculty promotion and tenure" (p. 6). As campuses align themselves toward high quality service to diverse groups, student experiences and outcomes will improve.

Using a similar perspective, Bensimon, Dowd, Daniels, and Walden (2010) worked with a college partner to examine barriers to equitable student success in math. They found that math syllabi often "appeared to reinforce students' fear of failure in math and did not direct students to support resources" (p. 10). The college made changes to the creation of syllabi and a range of classroom practices that resulted in improvements in overall math performance as well as a reduction in performance gaps among racial-ethnic groups. They also emphasized the need for college leaders and faculty to develop greater equity-mindedness by becoming aware of, and addressing, biased assumptions and practices.

5. Conclusion

This paper has reviewed three ways of thinking about the effort to increase student success. In reality, however, college leaders who want to have a substantial impact on student success need to consider all three and develop a strategy that combines them. What might this look like?

- A college might want to start by doing an inventory that highlights existing barriers to student success; to carry this out they may want to organize widespread conversations that include students, faculty in both general education and workforce areas, student success personnel, administrative departments, and leadership.
- A next step might be to set goals for student success that are attainable in the short, medium, and long term.
- Subsequently, an overall framing approach could be selected. This could be:
    - Developing a commitment to improving every phase of the student pathway (e.g. through the Guided Pathways model)
    - Creating needed leadership skills and overall college capacity to generate positive change (e.g., through Achieving the Dream's Institutional Capacity Framework[4])
    - Aiming to implement as many positive practices as possible (e.g., using Complete College America's Game Changers).
- Within this framework, specific policies and programs should be prioritized that are most likely to lead to the attainment of the established goals based on prior research. Choices on their adoption or adaptation should be made, taking into account the college context, strengths, and barriers.
- At the same time, college leaders may want to consider both dimensions of enhancing culture discussed here, and whether they should begin their efforts with a focus on culture change per se or on infusing it into their reform efforts along the way.

Clearly, there is no one right way to improve student success. However, the thoughtful use of evidence-based practices can lead to important changes in student

[4] See https://www.achievingthedream.org/our-network/our-approach

experiences and outcomes. When done well, initial efforts will lay the groundwork for future, more ambitious change that allow colleges to help many more students fulfill their hopes and dreams.

References

Ambrose, S., & Poklop, L. (2015). Do students really learn from experience?. *Change: The Magazine of Higher Learning*, *47*(1), 54–61.

An, B. (2013). The impact of dual enrollment on college degree attainment: Do low-SES students benefit?. *Educational Evaluation and Policy Analysis*, *35*, 57–75.

Anderson, L. (2018). *Transfer and articulation – All state profiles.* Denver, CO: Education Commission of the States.

Aspen Institute. (n.d.). *What colleges do matters.* https://highered.aspeninstitute.org/about/

Auguste, B., Cota, A., Jayaram, K., & Laboissière, M. (2010). *Winning by degrees: The strategies of highly productive higher-education institutions*. New York, NY: McKinsey & Company.

Bahr, P., Fagioli, L., & Hetts, J. (2019) Improving placement accuracy in California's community colleges using multiple measures of high school achievement. *Community College Review*, *47*(2), 178–211.

Bailey, D. (2003). Swirling changes to the traditional student path. *American Psychological Association Monitor on Psychology*, *34*, 36.

Bailey, T. (2009). Challenge and opportunity: Rethinking the role and function of developmental education in community college. *New Directions for Community Colleges*, *2009*(145), 11–30.

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

Bailey, T., Jenkins, D., & Leinbach, T. (2005). *What we know about community college low-income and minority student outcomes: Descriptive statistics from national surveys*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Bailey, T., Jeong, D., & Cho, S. W. (2010). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review*, *29*(2), 255–270.

Baker, R. (2016). The effects of structured transfer pathways in community colleges. *Educational Evaluation and Policy Analysis*, *28*(4), 626–646.

Bandura, A. (1997) *Self-efficacy: The exercise of control.* New York, NY: W. H. Freeman.

Barnett, E. (2011) Validation experiences and persistence among community college students. *Review of Higher Education*, *34*(2), 193–230.

Barnett, E., Bergman, P., Kopko, E., Reddy, V., Belfield, C., & Roy, S. (2018). *Multiple measures placement using data analytics: An implementation and early impacts report.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Barnett, E., Bork, R., Mayer, A., Pretlow, J., Wathington, H., & Weiss, M. (2012). *Bridging the gap: An impact study of eight developmental summer bridge programs in Texas*. New York, NY: National Center for Postsecondary Research.

Barnett, E., Fay, M., Pheatt, L., & Trimble, M. (2016). *What we know about transition courses.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Belfield, C., & Crosta, P. (2012). *Predicting success in college: The importance of placement tests and high school transcripts* (CCRC Working Paper No. 42). New York, NY: Columbia University, Teachers College, Community College Research Center.

Bensimon, E., Dowd, A., Daniels, J., & Walden, D. (2010). Long-term partners for serving Los Angeles' African American and Latino students: USC's Center for Urban Education and Los Angeles Southwest College. In *College bound: Strategies for access and success for low-income students* (pp. 34-45). Los Angeles, CA: University of Southern California Office of Government and Civic Engagement.

Berger, A., Garet, M., Hoshen, G., Knudson, J., & Turk-Bicakci, L. (2013). *Early college, early success: Early College High School Initiative impact study*. Washington, DC: American Institutes for Research.

Berger, A., Turk-Bicakci, L., Garet, M., Knudson, J., & Hoshen, G. (2014). *Early college, continued success: Early College High School Initiative impact study*. Washington, DC: American Institutes for Research.

Bettinger, E., & Baker, R. (2014). The effects of student coaching: An evaluation of a randomized experiment in student advising. *Educational Evaluation and Policy Analysis*, *36*(1) 3-19.

Boatman, A. (2012). *Evaluating institutional efforts to streamline postsecondary remediation: The causal effects of the Tennessee developmental course redesign initiative on early student academic success* (NCPR Working Paper). New York, NY: National Center for Postsecondary Research.

Calcagno, J., & Long, B. (2008). *The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance* (NBER Working Paper No. 14194). Cambridge, MA: National Bureau of Economic Research.

Callanan, G., & Benzing, C. (2004). Assessing the role of internships in the career-oriented employment of graduating college students. *Education & Training*, *46*(2), 82–89.

Cantor, J. (1995). *Experiential learning in higher education: Linking classroom and community* (Higher Education Report No. 7). Washington, DC: ASHE-ERIC.

Carnevale, A., Rose, S., & Cheah, B. (2014). *The college payoff: Education, occupations, lifetime earnings*. Washington, DC: Georgetown University Center on Education and the Workforce.

Chen, X. (2016). *Remedial coursetaking at US public 2-and 4-year institutions: Scope, experiences, and outcomes* (NCES Statistical Analysis Report 2016-405). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Cho, S. W., & Karp, M. (2012). *Student success courses and educational outcomes at Virginia community colleges* (CCRC Working Paper No. 40). New York, NY: Columbia University, Teachers College, Community College Research Center.

Cho, S. W., Kopko, E., Jenkins, D., & Jaggars, S. (2012). *New evidence of success for community college remedial English students: Tracking the outcomes of students in the Accelerated Learning Program (ALP)* (CCRC Working Paper No. 53). New York, NY: Columbia University, Teachers College, Community College Research Center.

Community College Research Center (n.d.). *Redesigning your college through Guided Pathways: Lessons on managing whole-college reform from the AACC Pathways Project* (webpage description of publication). Retrieved from https://ccrc.tc.columbia.edu/publications/redesigning-your-college-guided-pathways.html.

Complete College America (2017). *The power of 15 credits: Enrollment intensity and postsecondary student achievement.* Denver, CO: Authors.

Council for Adult and Experiential Learning (2018). *More than just a job search: Relevant, intentional and accessible career services for today's student (and returning adults).* Chicago, IL: Author.

Cullinan, D., Barnett, E., Kopko, E., Lopez, A., & Morton, T. (2019). *Expanding access to college-level coursers: Early findings from an experimental study of multiple measures assessment and placement*. New York, NY: MDRC.

Darling, R., & Smith, M. (2007). First-generation college students: First-year challenges. *Academic Advising: New Insights for Teaching and Learning in the first year. NACADA Monograph Series*, *14*, 203-211.

Deil-Amen, R., & Rosenbaum, J. (2003). The social prerequisites of success: Can college structure reduce the need for social know-how? *The Annals of the American Academy of Political and Social Science*, *586*, 120–143.

Dougherty, K. (1994). *The contradictory college: The conflicting origins, impacts, and futures of the community colleges.* Albany, NY: State University of New York Press.

Edgecombe, N., Jaggars, S., Xu, D., & Barragan, M. (2014). *Accelerating the integrated instruction of developmental reading and writing at Chabot College.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Edmunds, J., Unlu, F., Glennie, E., Bernstein, L., Fesler, L., Furey, J., & Arshavsky, N. (2017). Smoothing the transition to postsecondary education: The impact of the early college model. *Journal of Research on Educational Effectiveness*, *10*(2), 297-325.

Freeman, S., Eddy, S., McDonough, M., Smith, M., Okoroafor, N., Jordt, H., & Wenderoth, M. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(23), 8410-8415.

Fullan, M. (2006). *Change theory: A force for school improvement*. Victoria, CA: Center for Strategic Education.

Giani, M., Alexander, C., & Reyes, P. (2014). Exploring variation in the impact of dual-credit coursework on postsecondary outcomes: A quasi-experimental analysis of Texas students. *High School Journal*, *97*(4), 200–218.

Glosser, A., Martinson, K., Cho, S.W., & Gardiner, K. (2018). *Washington state's Integrated Basic Education and Skills Training (I-BEST) program in three colleges: Implementation and early impact report* (OPRE Report No. 2018-87). Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Gore, P. (2006). Academic self-efficacy as a predictor of college outcomes: Two incremental validity studies. *Journal of Career Assessment*, *14*(1), 92–111.

Grubb, W. (2006). "Like, what do I do now?": The dilemmas of guidance counseling. In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 195–222). Baltimore, MD: Johns Hopkins University Press.

Hatch, D. & Garcia, C. (2017). Academic advising and the persistence intentions of community college students in their first weeks in college. *The Review of Higher Education*, *40*(3), 353–390.

Hayward, C. & Willett, T. (2014). *Curricular redesign and gatekeeper completion: A multi-college evaluation of the California Acceleration Project.* Berkeley, CA: The Research and Planning Group for the California Community Colleges.

Hodara, M., & Rodríguez, O. (2013). T*racking student progression through the core curriculum* (CCRC Analytics Brief). New York, NY: Columbia University, Teachers College, Community College Research Center.

Ignash, J. & Townsend, B. (2000) Evaluating state-level articulation agreements according to good practice. *Community College Review*, *28*(3), 1-21.

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

Jenkins, D., Brown, A., Fink, J., Lahr, H., & Yanagiura, T. (2018). *Building Guided Pathways to community college success: Promising practices and early evidence from Tennessee.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Jenkins, D., Lahr., H., Brown, A., & Mazzariello, A. (2019). *Redesigning your college through Guided Pathways: Lessons on managing whole-college reform from the AACC Pathways Project.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Jenkins, D., Speroni, C., Belfield, C., Jaggars, S., & Edgecombe, N. (2010). *A model for accelerating academic success of community college remedial English students: Is the Accelerated Learning Program (ALP) effective and affordable?* (CCRC Working Paper No. 21). New York, NY: Columbia University, Teachers College, Community College Research Center.

Kadlec, A., & Gupta, J. (2014). *Indiana regional transfer study: The student experience of transfer pathways between Ivy Tech Community College and Indiana University.* New York, NY: Public Agenda.

Kane, T., Boatman, A., Kozakowski, W., Bennett, C., Hitch, R., & Weisenfeld, D. (2018*). Remedial math goes to high school: An evaluation of the Tennessee SAILS program* (CEPR Policy Brief). Cambridge, MA: Harvard University, Center for Education Policy Research.

Karp, M. (2011). *Towards a new understand of non-academic support: Four mechanisms encouraging positive student outcomes in the community college* (CCRC Working Paper No. 28). New York, NY: Columbia University, Teachers College, Community College Research Center.

Karp, M., & Jeong, D. (2008). *Conducting research to answer your questions about dual enrollment.* Washington, DC: U.S. Department of Education.

Kezar, A. (2014). *How colleges change: Understanding, leading, and enacting change.* New York, NY: Routledge.

Kezar, A. (2019). *Creating a diverse student success infrastructure: The key to catalyzing cultural change for today's student.* Los Angeles, CA: University of Southern California, Pullias Center for Higher Education.

Kuh, G. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, *66*(2), 123–155.

Lakos, A., & Amos, S. (2004). Creating a culture of assessment: A catalyst for organizational change. *Libraries and the Academy*, *4*(3), 345–361.

Lerner, J., & Brand, B. (2006). *The college ladder: Linking secondary and postsecondary education for success for all students.* Washington, DC: American Youth Policy Forum.

Lipnevich, A., MacCann, C., & Roberts, R. (2013). Assessing noncognitive constructs in education: A review of traditional and innovative approaches. In D. Saklofske & V. Schwean (Eds.), *Oxford handbook of psychological assessment of children and adolescents* (pp. 750–772). Cambridge, MA: Oxford University Press.

Logue, A., Douglas, D., & Watanabe-Rose, M. (2019). Corequisite mathematics remediation: Results over time and in different contexts. *Educational Evaluation and Policy Analysis*, *41*(3), 294–315.

Logue, A., Watanabe-Rose, M., & Douglas, D. (2016). Should students assessed as needing remedial mathematics take college-level quantitative courses instead? A randomized controlled trial. Educational *Evaluation and Policy Analysis*, *38*(3), 578–598.

Martorell, P., & McFarlin, Jr., I. (2011). Help or hindrance? The effects of college remediation on academic and labor market outcomes. *The Review of Economics and Statistics*, *93*(2), 436–454.

Mayhew, M., Rockenbach, A., Bowman, N., Seifert, T., Wolniak, G., Pascarella, E., & Terenzini, P. (2016). *How college affects students: 21st century evidence that higher education works* (3rd ed.). San Francisco, CA: Jossey-Bass.

McCormick, A. (2003). Swirling and double diffing: New patterns of student attendance and their implications for higher education. *New Directions for Higher Education*, *121*, 13–24.

Miller, C., Headlam, C., Manno, M., & Cullinan, D. (2020). *Increasing community college graduation rates with a proven model: Three-year results from the Accelerated Study in Associate Programs (ASAP) Ohio Demonstration*. New York, NY: MDRC.

Mokher, C., Leeds, D., & Harris, J. (2018). Adding it up: How the Florida college and career readiness initiative impacted developmental education. *Educational Evaluation and Policy Analyses*, *40*(2), 219–242.

Nodine, T., Jaeger, L., Venezia, A., & Bracco, K. (2012). *Connection by design: Students' perceptions of their community college experiences*. San Francisco, CA: WestEd.

Ran, F.X., & Lin, Y. (2019). *The effects of corequisite remediation: Evidence from a statewide reform in Tennessee.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Rendon, L. (1994). Validating culturally diverse students: Toward a new model of learning and student development." *Innovative Higher Education*, *19*, 33–51.

Rosenbaum, J., Deil-Amen, R., & Person, A. (2006). *After admission: From college access to college success.* New York, NY: Russell Sage Foundation.

Rutschow, E., Richburg-Hayes, L., Brock, T., Orr, G., Cerna, O., Cullinan, D., Kerrigan, M., Jenkins, D., Gooden, S., & Martin, K. (2011). *Turning the tide: Five years of Achieving the Dream in community colleges.* New York, NY: MDRC.

Schein, E. H. (2004). *Organizational culture and leadership.* San Francisco, CA: Jossey-Bass.

Schreiner, L. (2013). Thriving in college. *New Directions for Student Services*, *2013*(143), 4–52.

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). New York, NY: Columbia University, Teachers College, Community College Research Center.

Scott-Clayton, J. (2012). *Do high-stakes placement exams predict college success?* (CCRC Working Paper No. 41). New York, NY: Columbia University, Teachers College, Community College Research Center.

Scott-Clayton, J., Crosta, P., & Belfield, C. (2014). Improving the targeting of treatment: Evidence from college remediation. *Educational Evaluation and Policy Analysis*, *23*(3), 371–393.

Scrivener, S., & Weiss, M. (2013). *More graduates: Two-year results from an evaluation of Accelerated Study in Associate Programs (ASAP) for developmental education students* (MDRC Policy brief). New York, NY: MDRC.

Shapiro, D., Ryu, M., Huie, F., Liu, Q., & Zheng, Y. (2019). *Completing College 2019 national report* (Signature Report 18). Herndon, VA: National Student Clearinghouse Research Center.

Sheldon, C., & Durdella, N. (2010). Success rates for students taking compressed and regular length developmental courses in the community college. *Community College Journal of Research and Practice, 34*, 39–54.

Smith, E. (2010). *The role of social supports and self-efficacy in college success*. Washington, DC: Institute for Higher Education Policy.

Smith, M. (2010). *Transfer and articulation policies* (Technical Report). Denver, CO: Education Commission of the States.

Sommo, C., Mayer, A., Rudd, T., & Cullinan, D. (2012). *Commencement day: Six-year effects of a freshman learning communities program at Kingsborough Community College.* New York: MDRC.

Soto, E. (2012) The effects of dual enrollment courses: Do they prepare students for college?. *McNair Scholars Research Journal*, *8*(1), Article 11.

Struhl, B., & Vargas, J. (2012). *Taking college courses in high school: A strategy guide for college readiness – The college outcomes of dual enrollment in Texas*. Washington, DC: Jobs for the Future.

Terenzini, P., Pascarella, E., & Blimling, G. (1999). Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *Journal of College Student Development*, *40*, 610–623.

Tierney, W., & Lanford, M. (2016). Conceptualizing innovation in higher education. In M. Paulson (Ed.), *Higher education: Handbook of theory and research* (pp. 1–49). Dordrecht: Springer.

Toma, J. (2010). *Building **or**ganizational **c**apacity: Strategic management in higher education*. Baltimore, MD: The Johns Hopkins University Press.

Trimble, M., Pheatt, L., Papikyan, T., & Barnett, E. (2017*). Can high school transition courses help students avoid college remediation? Estimating the impact of a transition program in a large urban district* (CCRC Working Paper No. 99). New York, NY: Columbia University, Teachers College, Community College Research Center.

Van Noy, M., Weiss, M., Jenkins, D., Barnett, E., & Wachen, J. (2012). *Structure in community college career-technical programs: A qualitative analysis* (CCRC Working Paper No. 50). New York, NY: Columbia University, Teachers College, Community College Research Center.

Velez, W. (1985). Finishing college: The effects of college type. *Sociology of Education*, *58*, 191–200.

Venezia, A., & Voloch, D. (2012). Using college placement exams as early signals of college readiness: An examination of California's Early Assessment Program and New York's At Home in College. *New Directions for Higher Education*, *2012*(158), 71–79.

Visher, M., Schneider, E., Wathington, H., & Collado, H. (2010). *Scaling up learning communities: The experience of six community colleges*. New York, NY: National Center for Postsecondary Research.

Visher, M., Schneider, E., Wathington, H., & Collado, H. (2012). *The effects of learning communities for students in developmental education: A synthesis of findings from six community colleges.* New York, NY: MDRC.

Visher, M., & Teres, J. (2011). *Breaking new ground: An impact study of career focused learning communities at Kingsborough Community College.* New York, NY: National Center for Postsecondary Research.

Vuong, M., Brown-Welty, S., & Tracz, S. (2010). The effects of self-efficacy on academic success of first-generation college sophomore students. *Journal of College Student Development*, *51*(1), 50–64.

Walker, C. (2019). Experiential learning as a strategy for student completion and course success in the community college. *Community College Journal of Research and Practice*, *43*(10-11), 803–806.

Wang, X. (2017). Toward a holistic theoretical model of momentum for community college student success. In M. B. Paulsen (Ed.), *Higher education: Handbook of theory and research*. Cham, Switzerland: Springer.

Weiss, M., Brock, T., Sommo, C., Rudd, T., & Turner, M. (2011). *Serving community college students on probation: Four-year findings from Chaffey College's Opening Doors program*. New York, NY: MDRC.

Xu, D. (2016). Assistance or obstacle? The impact of different levels of English developmental education on underprepared students in community colleges. *Educational Researcher*, *45*(9), 496–507.

Zajacova, A., Lynch, S., & Espenshade, T. (2005). Self-Efficacy, stress, and academic success in college. *Research in Higher Education*, *46*, 677–706.

Zeidenberg, M. (2012). *Valuable learning or "spinning their wheels"? Understanding excess credits earned by community college associate degree completers* (CCRC Working Paper No. 44). New York, NY: Columbia University, Teachers College, Community College Research Center.