



**Toward a New Understanding of Non-Academic Student Support:
Four Mechanisms Encouraging Positive Student Outcomes
in the Community College**

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Abstract

This paper examines the ways in which academically vulnerable students benefit from non-academic support. By reviewing theories of student persistence as well as program evaluation literature, the author identifies four mechanisms by which non-academic supports can improve student outcomes, including persistence and degree attainment. Programs associated with positive student outcomes seem to involve one or more of the following mechanisms: (1) creating social relationships, (2) clarifying aspirations and enhancing commitment, (3) developing college know-how, and (4) making college life feasible. Identifying these mechanisms allows for a deeper understanding of both the functioning of promising interventions and the conditions that may lead students to become integrated into college life. Notably, each of these mechanisms can occur within a variety of programs, structures, or even informal interactions. The paper concludes by discussing avenues for further research and immediate implications for colleges.

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1. Introduction

Despite their best efforts, community colleges continue to see low rates of student persistence and degree attainment, particularly among academically vulnerable¹ students. Of the students who entered community colleges during the 2003–2004 school year, 45% left college within three years without earning a credential (Provasnik & Planty, 2008). Recent studies show mixed impacts from participation in developmental education (Bettinger & Long, 2005, 2009; Calcagno & Long, 2008), which indicates that such interventions do not appear to meaningfully increase the number of developmental education students obtaining degrees. While it is likely that academic interventions need to be reformed to increase their efficacy, another possible explanation for these low success rates is that students have other needs that are not being met. This paper examines programs and practices that appear to address these needs by providing non-academic support in order to encourage student success.

There is ample evidence that being successful in college requires more than the ability to master college-level academic skills. Postsecondary education constitutes a new space that students must learn to navigate, both physically and in terms of bureaucratic requirements (Attinasi, 1989; Rosenbaum, Deil-Amen, & Person, 2006). Students must meet new expectations (Shields, 2002) and engage in new types of interpersonal relationships (Dickie & Farrell, 1991). If students are unable to meet all of these new demands, they are unlikely to successfully obtain a college credential.

Students in all types of postsecondary institutions are likely to encounter difficulties in understanding and enacting college expectations. However, these difficulties are most commonly experienced by students in two-year colleges and open-access, four-year commuter colleges, as these institutions are most likely to enroll academically vulnerable students. I therefore focus this paper on the processes and

¹ I use the term “academically vulnerable” to refer to students from backgrounds that are correlated with low levels of postsecondary success, including those who are academically underprepared, from underrepresented minority groups, students with low socioeconomic status, and students who have low levels of parental education. I use this term to emphasize the fact that while most efforts to increase rates of student persistence focus on students enrolled in developmental education, many students—even those possessing the requisite academic skills—are at risk of postsecondary failure and in need of non-academic support.

supports that appear to help students in these two types of institutions acclimate to and be successful in college.

Non-academic support activities are presumed to encourage academic success but are not overtly academic. They can occur within formally structured programs or informally, through in-class interactions. Often, structured programs that encourage non-academic support also have an academic component; learning communities, for example, restructure instruction and pedagogy in addition to providing social support. In this way, there is a symbiotic and multiplicative relationship between academic interventions, such as tutoring and developmental education, and non-academic supports. Nonetheless, non-academic supports are distinct from academic ones in that they address different skills and knowledge and encourage student success via different processes.

The goal of this paper is to use current theories of student persistence, coupled with program evaluation literature, to identify the processes by which non-academic supports can help students remain enrolled in college, earn good grades, and earn a credential. Identifying these processes allows us to move our theoretical conception of student persistence toward a deeper understanding of *how*—how do common interventions create competent and successful college students, and what are the conditions that lead students to become “integrated” or “committed”? By articulating the processes by which non-academic supports help students succeed, this paper also provides practitioners with a better understanding of the elements necessary for successful non-academic support efforts.

The major theories of student persistence (Tinto, 1993; Pascarella & Terenzini, 2005; Braxton, Sullivan, & Johnson, 1997; Braxton, Hirschy, & McClendon, 2004; Bean & Metzner, 1985) argue, in various ways, that student persistence in postsecondary education is influenced by a combination of pre-existing characteristics, external forces, and institutional factors. These theories also purport that students need to feel that higher education is an important part of their lives and that it is worthwhile to stay enrolled. The authors note that this belief in the usefulness of postsecondary education (variously called integration, commitment, and positive psychology) is harder to develop for commuters and nontraditional students but is essential nonetheless.

These theories—particularly Tinto’s—are the dominant frame through which researchers and practitioners view student success within community and commuter colleges. However, they are hard-pressed to provide practical guidance to community colleges who wish to improve the success of their students, for two reasons. First, the key theories (Tinto, 1993; Pascarella & Terenzini, 2005; Braxton et al., 1997) are based on the experiences of four-year, residential students. They present an image of college attendance in which the four-year, residential model—replete with its many opportunities for integration and connectedness—is the norm. Similarly, these theories do not address the unique experiences of underrepresented minority students and those entering college with low levels of academic skill. As a result, the dominant paradigm for understanding postsecondary persistence does little to account for the experiences and outcomes of the many part-time, commuter, and underrepresented minority students attending two-year institutions. If the dominant theories of postsecondary success do not apply, then we need to develop an alternative—or at least supplemental—theoretical perspective.

Second, many of the dominant student persistence theories also lack a clear understanding of how student persistence occurs. Empirical tests of theories rooted in Tinto’s integration framework (Tinto, 1993; see also Pascarella & Terenzini, 2005; Braxton et al., 1997; Braxton et al., 2004) demonstrate that integration and commitment are related to student success, but they do not explain how students become integrated. For practitioners, the result has been challenging—the many efforts to put these theories into practice have often floundered due to an incomplete understanding of what contexts, structures, and experiences lead to students’ postsecondary integration.

To better understand student persistence among academically vulnerable students in commuter and two-year institutions, several CCRC colleagues and I engaged in an extensive review of the literature.² This review focused on non-academic support provided to students, defined as services, interventions, and informal activities that help students address the social, cultural, and otherwise implicit demands of college. These activities are not explicitly academic (in that they do not provide basic skills) but instead are intended to help students navigate the academic world of higher education.

² Additional members of the research team were Nikki Edgecombe, David Blazar, and Madeline Weiss.

We read and reviewed 128 books, journal articles, and reports. These included evaluations of common interventions and the most commonly cited theoretical works. In our review of the empirical studies (see Appendix, Table 1), we first attempted to establish the strength of the evidence supporting specific types of intervention programs. However, we encountered two primary challenges to this effort.

First, the myriad approaches to providing non-academic support result in the inclusion of many different programs in this body of literature. (The text box below describes common non-academic support programs.) Moreover, evaluations of non-academic supports tend to group different interventions under the same category. For example, the “learning community” literature incorporates a range of programs that include multiple and widely varying components. As a result, it is not always possible to isolate the effects of a specific program element. Second, studies varied in their methodological approach as well as their rigor. Studies in this area, with a small number of important exceptions, contained a number of methodological challenges, including poorly constructed (or absent) comparison groups, small sample sizes, low levels of statistical control, and a focus on short-term outcomes.

Common Non-Academic Support Programs

Learning community: A pair or group of courses taken by a cohort of students, often linked by a theme and team-taught. Learning communities vary in their structure, from a pair of linked courses to blocks of courses that encompass students’ entire course schedules for a semester or year. Some learning communities include a student success course or targeted support services.

Student success course: Also called “College 101” or “Introduction to College,” this course helps students acclimate to college by providing them with information about resources and services, help in selecting majors and courses, and instruction in study skills. Some student success courses have a career theme or are linked to a specific major.

Enhanced or intrusive advising: Traditional advising supplemented in various ways, such as required meetings, lower counselor-student ratios, assigned counselors or mentors, or longer, more intensive counseling sessions.

Given these two challenges, we concluded that while the literature generally supports the notion that non-academic support can improve student outcomes, it does not provide us with definitive answers about which program elements or practices lead to student success. Rather than discuss in detail the rather weak evidence for specific non-academic support programs, then, this paper takes a different approach, using the evaluation literature to interrogate our current understanding of student persistence and to propose a more process-oriented framework of non-academic support.

To use the evaluation literature as part of a revised persistence framework, the research team and I carefully analyzed the program description included in each study to inductively identify the main components of the intervention under investigation. Studies were grouped based on their common components, rather than the stated title of the intervention. For example, in studies of student success courses, we examined the description offered by the authors in order to understand why any positive outcomes might have occurred. Courses focused on improving study skills were categorized one way, while courses focused on creating community were categorized another way.³ Table 1 summarizes the empirical studies included in the review.

Examining the literature for program components underscores the fact that the specific service or program by which a support is delivered is less important than the processes that encourage positive outcomes to occur. Mediating variables within programs provide the “action” that allows them to encourage positive outcomes; in the absence of such variables, program participation is irrelevant. In addition, different programs or support delivery systems may contain the same types of supports.

The remainder of this paper is organized around the specific processes, or mechanisms, that seem to most strongly encourage positive student outcomes. Mechanisms are the “things that happen” within programs or activities that support students and help them succeed in and graduate from postsecondary education. Each mechanism has both theoretical and empirical support, as well as immediately practical implications.

³ In some studies, we identified more than one mechanism.

The four mechanisms that appear to encourage student success are:

1. *Creating social relationships*: These activities help students interact with professors and classmates in meaningful ways so that they develop strong relationships with each other. Such activities make students feel that they belong in higher education and provide students with access to information and resources that they can use to be successful in school and after graduation.
2. *Clarifying aspirations and enhancing commitment*: These activities help students develop clear goals and become or remain committed to achieving those goals via higher education.
3. *Developing college know-how*: These activities help students learn about the procedural and cultural demands of college. This includes basic information, such as how to navigate the physical space of college, as well as valuable cultural knowledge. Finally, college know-how includes strategies for attaining success in postsecondary education, such as study skills, resume-writing, and how to use student services.
4. *Making college life feasible*: These activities meet students' needs as they arise. They are the "little things" that help students overcome the various challenges they face outside of the classroom.

2. Four Non-Academic Support Mechanisms

2.1 Creating Social Relationships

Meaningful social relationships play an important role in promoting persistence because they help students feel comfortable in college and provide them with access to information that can ease their path toward a degree. Finding ways to promote social relationships for non-traditional students is particularly important because they often have fewer opportunities to create them on their own, due to competing demands on their time.

Supporting theory. The theoretical literature provides strong support for the notion that part-time, commuter, and two-year college students need assistance in

developing strong social connections to postsecondary education. Tinto (1993) emphasizes the difficulty that students who do not become socially connected to postsecondary education have in remaining enrolled. Moreover, he argues that nonresidential students have particular challenges developing and maintaining such connections because their “external communities” may work against membership in college communities, either by providing competing demands on time and energy or by emphasizing norms that contrast with the norms of higher education (p. 128). Pascarella and Terenzini (2005) and Braxton and colleagues (Braxton et al., 1997; Braxton et al., 2004) make similar arguments.

Even critics of Tinto argue that social relationships are important for creating student success, particularly for academically vulnerable students. Bensimon (2007), for example, discusses the ways that “institutional agents” can encourage student success by providing interpersonal connections, advice, motivation, and information. She notes that these individuals do not need to be part of a formal program or have a formal advising role in order to play a significant part in creating student success. Rendon (1994) makes a similar point—that nontraditional students commonly expect to fail in college but can overcome this expectation with the help of external agents who actively help them navigate college and validate that they belong in postsecondary education.

Finally, theoretical support for the importance of social relationships comes from the sociological literature on social networks and social capital. Authors such as Coleman (1988) and Granovetter (1974) argue that social relationships can be used as a form of currency to help individuals obtain valued goods. Relationships can be used to access information that can, in turn, be used to succeed in educational endeavors and obtain desired credentials. In this way, social relationships promote student success by themselves and can also serve as a conduit for developing other important mechanisms, such as college know-how.

Empirical evidence. The evaluation literature provides evidence that creating social relationships is an important way to increase students’ integration and access to information. There is suggestive—though not terribly strong—evidence that relationships can improve student success as well.

Increased integration. With regard to the creation of relationships being associated with increased integration, Tinto and his colleague (Engstrom & Tinto, 2008; Tinto, 1993, 1997) conducted a number of mixed-methods studies and found that students in learning communities reported higher participation in college activities. Participants also reported that learning communities helped them develop relationships with their peers that helped them weather the transition into college. Similarly, a random assignment study of learning communities (Scrivener et al., 2008) found that participants reported a greater sense of integration and belonging on campus than did non-participants. Using structural equation modeling, Crisp (2010) found that strong interpersonal support predicted academic and social integration.

Lichtenstein (2005) found that students in learning communities characterized by supportive classrooms and strong interpersonal relationships had higher grades and retention rates than both students in learning communities that did not promote such connections and students who did not participate in learning communities. She used a mixed-method study including surveys, focus groups, and analysis of academic transcripts to do so. The study is particularly useful because it demonstrates that it is not learning community participation per se that encourages positive outcomes, but rather participation in those learning communities that help students become integrated that does so.

Qualitative research also shows that social relationships are important in encouraging integration and may be related to improved student outcomes. Using in-depth interviews with beginning community college students, Karp, O’Gara, and Hughes (2008) found that students who had strong networks of social relations were more likely to report being integrated into their college environment. Integrated students, in turn, were more likely to make progress toward a degree (Karp, Hughes, & O’Gara, 2010). Rendon (1994) emphasizes the importance that strong, positive, informal relationships can have on student success. Using qualitative data, Rendon illustrated that when external agents validate students’ educational experiences, the students are more likely to be successful. Bensimon (2007) offers additional anecdotal evidence that such relationships are particularly important for underrepresented minority students.

Increased information access. Social relationships provide access to information that students can use to help them succeed in college. Two studies, one using mixed-method studies including regression analyses (Engstrom & Tinto, 2008) and the other using ANOVA (Waldron & Yungbluth, 2007), found that students in learning communities reported more opportunities to communicate with and access information from faculty and peers. Both studies found that learning community participants had more positive outcomes than similar non-participants.

In a study of enhanced advising for lower-level math students, participants were assigned mentors who provided them with information and served as “go-to” individuals for any problems that arose during the semester (Visher, Butcher, & Cerna, 2010). Though such relationships did not translate into improved rates of passing math or persistence for the full sample, two subsamples—part-time students and developmental math students—did see improved outcomes as a result of the intervention. Importantly, these two subsamples represent the type of academically vulnerable student this paper is most interested in.

Practical implications. Non-academic support activities that help students cultivate meaningful relationships help them remain enrolled in and complete college. It’s important to note that these relationships must be meaningful in order to be useful—they have to be substantial enough that they help students feel connected to school or feel comfortable enough to leverage them to gain information. Karp et al. (2010) make this point, stating,

Most students in our sample, for example, differentiated between those students whom they knew in passing and those who were real friends. Typically, real friends provided information about course assignments, professors, and graduation requirements, while acquaintances were good for just chitchat. (p. 78)

Though they used qualitative data and a small sample, these authors found an association between having “real friends” and making progress toward a degree.

Activities that help students interact with one another or with professors over a prolonged period of time seem to encourage this mechanism best. Well-implemented learning communities, for example, help students create relationships because students

spend a significant amount of time with one another and often have shared interests. In many learning communities, students also have multiple opportunities to get to know their professors, since courses are team-taught and often include interactive pedagogies. It is important to note that not all learning communities are well-implemented, and those that are not are unlikely to encourage this mechanism (Lichtenstein, 2005).

Any intervention structured around a peer cohort or group pedagogy is likely to encourage the development of social relationships. Student success courses, which explicitly aim to help students acclimate to college, gain access to information, and get to know faculty and peers, may do so. There is a growing body of evidence associating these courses with strengthening connections between students, faculty, and staff (O’Gara, Karp, & Hughes, 2009; Tinto, 1993) and positive student outcomes (Strumpf & Hunt, 1993; Zeidenberg, Jenkins, & Calcagno, 2007). These courses vary greatly in content and structure, however, and, as with learning communities, it is likely that not all student success courses encourage social relationships to the same extent.

Outside of specific interventions and courses, other non-academic support strategies can also encourage this mechanism. Merely promoting interaction in and outside of class, via interactive pedagogy, required study groups, or mandatory meetings and communication with professors, can help students develop meaningful social connections. Likewise, helping faculty and staff learn how to become institutional or external agents for students—such that they help students feel welcome, supported, and validated—may encourage students’ sense of belonging and their persistence.

2.2 Clarifying Aspirations and Enhancing Commitment

Most young people today understand that a postsecondary credential is important and intend to earn a degree (U.S. Department of Education, 2006). However, many students, particularly those vulnerable to academic failure or from backgrounds without a strong tradition of college-going, have only a loose sense of why college is important and how it can help them achieve their goals. Those who do not have clear goals and genuine understanding of why college is worth it even when it is difficult are likely to be derailed by relatively minor challenges and setbacks (Grubb, 2006). Thus, non-academic supports that help students crystallize their educational and occupational goals, understand how

college can help them achieve those goals, and develop commitment to college even in the face of obstacles can increase the likelihood that they will persist.

Supporting theory. Tinto (1993) and Bean and Metzner (1985) argue that students must become committed to an institution and postsecondary education in order to remain enrolled in it. Tinto argues that commitment develops when students have positive interactions with their college environments, as this allows them to view postsecondary education as a positive endeavor. Bean and Metzner (1985) argue that for non-traditional students, psychological variables have a large influence on intent to leave. These variables include, among others, utility (perceiving college as useful for employment), satisfaction (enjoying being a student), and goal commitment (feeling that a college education is important). Bean and Metzner also argue that these psychological variables are so important that they can counteract other influences on persistence, such that students who have low grade point averages may still remain enrolled if they have high levels of commitment and see utility in remaining in college.

The socio-psychological concept of “possible selves” (Markus & Nurius, 1986) provides another lens through which to view this mechanism. Possible selves refer to the various images of the person one might become in the future. These selves provide context for future goals, as well as motivation to achieve them. Since possible selves are rooted in reality (you cannot conceive of a role you do not know exists), helping students develop ambitious but realistic possible selves can help them understand why college is important and become more committed to remaining enrolled.

Possible selves also serve as motivators because individuals seek to bring their behavior and achievements in line with their idealized selves. By helping students clarify their plans and develop concrete steps for reaching them, non-academic supports capitalize on this aspect of the possible self. They take students’ idealized visions of the future and turn them into concrete, actionable goals that require a college degree. And because students seek to make their possible selves real, they are likely to remain committed to college even when it is challenging.

Viewing college as ancillary or loosely related to their goals decreases students’ commitment to higher education; they are less likely to want to remain enrolled when confronted with academic or logistical challenges because they find that the trade-offs are

not worth it. The corollary of this is that activities that help students understand why they are learning what they are learning can improve their commitment. Helping students recognize the usefulness of curricular activities or pedagogical approaches can improve their desire to remain enrolled and therefore increase their likelihood of postsecondary persistence and credential attainment.

Empirical evidence. There is promising, but weak, evidence that clarifying aspirations and enhancing commitment can improve student outcomes. In particular, helping students to clarify the utility of college and to increase their use of concrete planning and goal-setting has been shown in some instances to be related to improved persistence and transfer rates.

Clarifying utility. There is a body of qualitative work indicating that college students, particularly those attending community colleges, are strongly oriented toward the utility of postsecondary education (Grubb, 2006; Cox, 2009a, 2009c). They need to understand why they are expected to learn the content of their courses and how it relates to their future goals. Students who do not see the value in their coursework often behave in counterproductive ways, for example, by failing to complete assignments or dropping required courses.

Advising activities that meet this need can improve student outcomes. Bahr (2008) and Metzner (1989) both found that advising—particularly advising reported by students to be useful—positively influenced completion of remedial courses, persistence rates, and transfer rates after controlling for preexisting characteristics. Metzner (1989) also found that some of the effect of good advising was due to its influence on students’ perceptions of the utility of college and student satisfaction.

Increasing planfulness. Giving students the tools to develop a concrete set of steps for attaining their goals may also encourage commitment to college and positive outcomes. This is particularly important at community colleges, where students struggle to select a major or career pathway, but colleges often do not devote significant resources to helping them develop realistic programs of study (Grubb, 2006). In a random assignment study Visher et al. (2010) found modestly positive results from enhanced advising activities, which provide students with more intensive and personalized guidance than is typical in the community college, particularly for part-time and

developmental education students. Another random assignment study of enhanced advising (Scrivener & Weiss, 2009) found that such advising increased registration rates in the following semester but did not improve academic outcomes. Keenan and Gabovitch (1995) found that students in a student success course increased their “career maturity,” or ability to effectively set career goals, over the course of a semester, as compared to non-participants.

Practical implications. There is strong theoretical reason to believe that helping students clarify their aspirations and increase their commitment to college will improve their outcomes. The rather weak empirical support for this mechanism appears to stem from the challenges that colleges face in implementing activities that actually help students see the utility in college and create realistic and actionable plans for achieving their goals. The most obvious type of activity to help do this is advising, but advising in the community college is a “mixed bag,” conducted by counselors, advisors, or faculty members in a range of settings (for example, in quick meetings, during office hours, or through enhanced services). Community college advising is often underfunded, and students report dissatisfaction (Grubb, 2006; O’Gara et al., 2009). It is therefore not surprising that advising has not encouraged this mechanism or positive student outcomes very well.

We would expect that enhanced advising, with its intensive, prolonged and one-on-one format might improve student planfulness and outcomes to a greater extent than traditional advising. But the evidence is not overwhelmingly supportive of this contention (Scrivener & Weiss, 2009; Visher et al., 2010). This is perhaps because such interventions need to extend beyond a semester or two to have real impact, or because colleges are so strapped for counseling resources that they are unable to provide truly intensive advising services.

In light of the difficulty colleges have in implementing enhanced advising, alternative methods to help students clarify their goals and identify steps for achieving them via postsecondary education are needed. Student success courses are a promising vehicle for this, as they allow students to engage in major and career exploration, program planning, and course advising over multiple weeks with an instructor who has the opportunity to know them well. Moreover, delivering services to 30 students at one

time in a classroom setting is likely to be more resource-efficient than providing 30 students with multiple, individual advising sessions. We have already seen that research indicates that student success courses are positively related to student outcomes (O’Gara et al., 2009; Tinto, 1993; Strumpf & Hunt, 1993; Zeidenberg et al., 2007). It is important to remember, however, that these courses do vary significantly in their content, and not all student success courses are likely to emphasize planning and commitment to college to the same extent.

Colleges may want to leverage new technologies to help students clarify aspirations and increase commitment to college. For example, they could help students explore possible selves by providing video vignettes, available online, of students pursuing various career paths, their decision-making processes, and their own descriptions of how they are planning to achieve their goals. On the opposite end of the spectrum—and keeping in mind how important social relationships are in encouraging persistence—colleges might want to find ways to integrate program planning and descriptions of utility into academic coursework. For example, professors might be encouraged to help students understand why course content is relevant to their future coursework and occupational goals. Professors could also be encouraged to help students develop realistic program and career plans as part of their coursework. The key is to find ways to help students understand what their future might look like, and then give them the tools to get there—all within the confines of a resource-constrained environment.

2.3 Developing College Know-How

An important way to encourage positive student outcomes is to explicitly help students understand what they are expected to know and do in college, which includes not only academic knowledge (math, writing, or research skills, for example) but also the unwritten “rules” of the postsecondary environment. Students who do not understand these expectations are unlikely to navigate college successfully. Conley (2007) refers to this broad type of knowledge as “contextual skills and awareness.”

Supporting theory. Tinto (1993) argues that students must learn and internalize the unwritten rules of college in order to persist. If students do not come to understand the norms and expectations of postsecondary education, they will experience

incongruence and find it difficult to remain enrolled. Membership in social and academic communities on campus requires that one know how to be a part of the group, learning how to navigate the social and physical space that such a group inhabits. Tinto even implies that failure to persist is more often a function of poor understanding and internalization of the culture of postsecondary education than it is of poor academic performance.

Critics of Tinto's model contend that students should not have to choose between their home cultures and the majority college culture and note that many underrepresented minorities benefit from maintaining ties to their home cultures (Guiffrida, 2006; Rendon, Jalomo, & Nora, 2000; Tierney, 1999). However, they also recognize that the culture of higher education privileges certain skills and cultural knowledge, and that students must be assisted in learning "how to do" college if they are to be successful. Rendon et al. (2000), for example, argue that underrepresented minority students need to be actively invited to take advantage of college services. These students would benefit from being given information or shown how to approach a student support center. Tierney (1999) also argues that teaching these students the cultural expectations of postsecondary education can improve their college outcomes.

The sociological construct of cultural capital (Bourdieu, 1973) is another lens through which to view this type of knowledge and support. Cultural capital involves the accumulation of the types of knowledge that are most valued and therefore most useful in a given cultural context. In postsecondary education, this includes knowing how to ask for help (and when and where to ask for it), how to participate in class appropriately, and even how to "work" bureaucratic systems to access resources, such as financial aid.

Cultural capital is generally defined and possessed by dominant groups; in postsecondary education this means that upper-class and well-educated elites define "acceptable" behavior and the rules of the game. Because many nontraditional students come from other class backgrounds, they may not be aware of these expectations or may not possess the skills and knowledge to navigate the culture of postsecondary education. Students who do not possess cultural capital are often unable to access resources on campus. This might negatively impact their academic outcomes or make them feel uncomfortable enough to exit postsecondary education.

Empirical evidence. Developing college know-how is a particularly useful mechanism for students from backgrounds with little college-going experience. As the culture of higher education generally reflects majority, upper-middle-class culture, underrepresented minority students and those from lower-class backgrounds may need particular assistance in developing this knowledge. Even information that seems obvious to those familiar with college may not be so evident to academically vulnerable students. Although there is little research in this area and existing studies are primarily correlative, their results are consistent with the theoretical support described above.

Giving basic college information. In a companion working paper in CCRC's Assessment of Evidence Series, Scott-Clayton (2011) describes the complicated landscape that students must navigate on the way to earning a degree. Students struggle to figure out which courses to take, understand the progress they have made (or not) toward graduation, and learn which courses will count toward their major or transfer. Giving them better information can help students make good choices and progress toward a degree while minimizing frustration that might discourage them from persisting in college.

Giving students information about college increases the likelihood that they will access college services (Engstrom & Tinto, 2008; Keenan & Gabovitch, 1995). Students in one study of a learning community coupled with a student success course reported learning the “basics” of college, such as how to access financial aid and what various grades and credits mean (Engstrom & Tinto, 2008). The authors quote one student as saying that student success seminars “tell you what you need to know, step-by-step, and that’s a good thing” (p. 17).

Teaching strategies for success. Explicitly teaching students study and time management skills has been linked to improved use of support services (Visher et al., 2010) and, indirectly, to improved academic outcomes (Boudreau & Kromrey, 1994; Engstrom & Tinto, 2008; Visher et al., 2010). In some cases, these skills are taught as part of a student success course, while in others, they are taught as part of guidance and advising activities. Regardless of delivery method, it is not terribly surprising that students who know how to balance their time and make use of services such as tutoring perform better than those who do not.

Developing cultural capital. Though it theoretically and logically makes sense that explicitly teaching students the cultural demands of postsecondary education can improve their outcomes, this has not been closely examined. Most of the research on cultural capital focuses on preparing students for the workplace, not college itself—though it should be noted that the unspoken cultural expectations of both institutions are similarly upper-middle class. Two case studies of workforce preparation programs found that employers value soft-skills training more than training in technical skills (Houghton & Proscio, 2001; Nitschke, 2001). Using qualitative methods, Rosenbaum et al. (2006) found that private two-year occupational colleges explicitly teach cultural knowledge as part of the curriculum. They did not examine the impact of teaching these skills on academic outcomes but did find that private occupational colleges have stronger employment outcomes than do community colleges, which do not teach these skills explicitly. One study that did examine the role of cultural capital in students' academic success found that students' possession of cultural capital was positively correlated with use of student services and progress toward a degree (Karp et al., 2008).

Practical implications. Providing students with college know-how may be an important mechanism for improving outcomes, but it is not done on college campuses as frequently as we might expect. Giving students even basic information that is accurate and clear is a challenge. As we have already seen, the guidance and counseling function in colleges are overburdened and underfunded. Colleges often provide an array of information sources as an alternative—flyers, booklets, websites, workshops, and orientations, to name a few—but these efforts are not well-coordinated and sometimes even contradict themselves. Streamlining students' options and better structuring their choices is one possible solution to this problem, as it eliminates some decision points and creates clear guideposts for others (Scott-Clayton, 2010). Student success courses are another vehicle for providing basic information in a timely, efficient manner.

Teaching strategies for success is another approach that, while compelling, does not seem to be carried out frequently, outside of student success courses. One problem is that there might not be clear consensus as to which strategies need to be taught. This is evident in the fact that many student success courses vary in which skills they emphasize. In addition, many faculty members are reluctant to infuse such skills into their courses

because they assume that students should come to them already prepared to meet college-level expectations. And students themselves are often reluctant to admit that they need assistance in developing college success strategies, as evidenced by their reluctance to take college success courses (O’Gara et al., 2009; Cho, Jaggars, Karp, Jenkins, & Edgecombe, 2010). Colleges therefore should consider both making such courses mandatory and developing clear and consistent course goals for them.

Teaching cultural capital is rarely explicitly done. Infusing the curriculum with “soft skills” in order to explicitly teach students how to enact upper-middle-class expectations in the classroom could greatly enhance student outcomes. But this strategy must be done with caution. Helping students understand postsecondary culture and teaching them the skills to be successful must not be the same as erasing students’ home cultures or diminishing their import. Asking—even implicitly or unintentionally—students to give up their identities and cultures is likely to be counterproductive. Tierney (1999), for example, points out that students who retain their culture are more successful in school than those who assimilate into majority culture or reject their culture of origin. Teaching students about the cultures and norms of postsecondary education does not mean reinforcing the notion that upper-middle-class culture is preferable or better; rather, it means providing students with the opportunity to understand that postsecondary education is a distinct culture with a set of expectations and norms that can be learned and enacted in order to further their educational goals.

2.4 Making College Life Feasible

Community college students face an array of challenges, many of which cannot be anticipated or are short-term in nature. They nonetheless serve as barriers to success, as students become concerned with solving these day-to-day issues and cannot focus on school to the extent they would like to or should. The majority of community college students, for example, are now female, and more than one third are over the age of 30 (Provasnik & Planty, 2008). According to the American Association of Community Colleges (2010), 16% of community college students are single parents. These students are likely to confront conflicts between the demands of work, family, and school.

Services that make life feasible, then, serve to help students overcome these barriers so that their educational pursuits are not compromised. This mechanism encourages positive student outcomes by making daily life easier and more manageable, providing a little “nudge” that can help students deal with small obstacles which, left unaddressed, might become large enough to stymie their progress toward a degree.

Supporting theory. Bean and Metzner (1985) argue that external variables, including hours of employment, family responsibilities, and outside encouragement, have direct and important effects on student dropout, academic outcomes, and intent to leave. In fact, they argue that for nontraditional students, environmental variables are as important as academic variables in influencing persistence decisions. Braxton et al. (2004) extend this argument and apply it to commuter students. They argue that for this population, external forces such as work and family exert a strong influence on persistence, but the organizational context of college makes a difference—students who feel that their institution cares about their welfare are more likely to persist. It logically follows that helping to ensure that external influences remain positive and that the college environment supports work–school–family demands will help students have better outcomes.

Empirical evidence. There is less empirical support for this mechanism than for the other three. This is largely because programs tend to be targeted at very specific populations and needs and are therefore small-scale and institution-specific. Research is consequently conducted on such activities infrequently, and much of it is not rigorous.

Nonetheless, a number of studies provide empirical support for the notion that helping make life more manageable can improve student outcomes. In an ethnographic study of single mothers attending community college, Duquaine-Watson (2007) found that the need for childcare was a highly salient issue for her subjects. Women whose children were in care off-campus had increased transportation expenses and more difficulty juggling work, school, and family demands. They had less time to spend on campus and for studying.

A recent survey of young adults aged 22 to 30 with at least some college coursework, conducted by Public Agenda, gives additional evidence that helping students confront the daily challenges they face could improve their educational outcomes

(Johnson & Rochkind, 2009). Survey respondents who did not complete college felt the pressure of work and family acutely: Though 31% of respondents said that paying their tuition was a challenge, nearly twice as many (54%) said that their main obstacle to attaining a credential was the difficulty they had balancing work and school. Fifty-three percent of these students said that family commitments were a major reason why they could not return to college even if they wanted to.

Survey respondents agreed that assistance in making life more feasible would improve college completion rates. In particular, nearly 80% of respondents (both completers and non-completers) agreed that offering more evening and weekend courses and more flexible scheduling would help. Seventy-six percent of non-completers and 59% of completers thought that providing day care would help. And 69% of non-completers and 55% of completers thought that providing health insurance to all students, including part-time students, would improve college graduation rates.

In a random assignment study of enhanced advising at one college, Scrivener and Au (2007) found that such advising helped students confronting problems, such as an emergency hospitalization, by giving them individualized strategies and personalized support. This study found very modest gains in short-term academic outcomes for participants, as compared to a randomly assigned control group.

Practical implications. Because student needs in this area tend to be diverse, short-term, and small-scale, a wide array of non-academic supports can help make life feasible. Many of these are likely to occur outside of formal programs, as when a counselor or instructor helps students identify resources to overcome an individual challenge. Some interventions, however, could promote this mechanism in more systemic ways. For example, offering on-site daycare would help minimize the conflict between family and school, particularly for female students. Braxton et al. (2004) argue that commuter institutions seeking to improve student retention should offer courses at a variety of times in order to accommodate students' work and family demands and should provide on-campus work opportunities for students.

By some estimates, students spend more on transportation than they do on books; providing transportation assistance therefore may improve attendance while alleviating a significant financial burden (Martinez & Castañeda-Calleros, 2009). Hungry students are

unlikely to be effective students. To help the increasing number of students unable to feed their families and coming to class hungry, Macomb Community College in Michigan created a food bank, stocked with donations from members of the college community.

3. A Caveat: Recognizing the Student Perspective

The literature offers compelling evidence that the above four non-academic support mechanisms work to encourage student success. However, all of these mechanisms and subsequent efforts to implement them may be moot if we do not understand how students themselves experience these efforts. How do students view their relatively vulnerable college student status? How do they interpret efforts to increase their social connections, develop college know-how, clarify aspirations and enhance commitment, or improve school–life balance?

We know that student situational interpretations and identities matter. Students create their own understandings of college, and these understandings influence their learning and the ways that they experience attempts to improve their outcomes. If students do not view the information they are given as useful, for example, or if they do not find their social interactions to be meaningful, they are unlikely to capitalize on these mechanisms. Efforts to encourage positive outcomes will therefore be unsuccessful.

The ethnographic studies conducted by Cox (2009a, 2009b, 2009c) illustrate the many ways that community college students perceive college interactions differently than do faculty and staff. Students interpret classroom activities according to their own definitions of what “college” should be, and they rebel or act in ways that hurt their academic progress if they feel that they are not getting what they need or expect. Students and faculty often seem to be at cross-purposes, with faculty trying to help students and students perceiving such efforts as contrary to their own goals and visions of what they want or need. Students in turn fail to utilize good academic practices, but their behaviors may be the result of logical defense mechanisms or attempts to maximize utility. Both groups of individuals share the same ultimate goal, promoting student success, but

because they perceive efforts to achieve this goal so differently, student progress is thwarted.

Hurtado and Carter (1997) found that student perceptions of the campus environment affected their sense of belonging. For example, students who reported that there were racial or ethnic tensions on campus were less likely to feel that they belonged than those who did not report such tensions. Though this study was conducted with high-achieving Hispanic students at a four-year institution and does not link belonging to academic outcomes, it underscores the fact that student perceptions influence their experiences in school. Similarly, we can conceive of how advising and mentoring that is not sensitive to student perceptions will fall on deaf ears and be ineffective.

Rendon (1994) demonstrates that students need to feel validated by staff and faculty, and that when they do so, they begin to feel capable and worthy of being in college. She theorizes that validating students can improve outcomes. This work also illustrates that students' perceptions of the value of social connections created as part of non-academic support activities matter.

Despite this evidence, research has not carefully explored the influence of student perceptions of support services on outcomes. Rendon (1994) does not provide evidence that validation, sense of competence, or feelings of college-worthiness are related to outcomes. Cox (2009b) is unable to decisively link students' strategies for failure avoidance to outcomes, though she provides compelling qualitative evidence that such strategies hurt students' academic progress. Nora, Barlow, and Crisp (2005) point out that there is not much research on students' own understanding of their experiences, which they call "perceptual research."

A better understanding of student reactions to non-academic support activities and research linking student perceptions to their academic outcomes is therefore an area that is ripe for research. What do academically underprepared students think and feel about efforts to improve their outcomes? How do these feelings affect their reactions to formal and informal non-academic support activities? If such research were to find that the mechanisms discussed in this paper are not perceived by students as useful or meaningful, then we would be required to rethink our approach in using them to encourage student success.

4. Moving Forward: Theoretical and Practice Implications of a Mechanism-Based View of Non-Academic Support

Supporting students in their postsecondary pursuits requires that institutions address their non-academic needs. Though current theories of persistence examine the role non-academic support plays in the persistence process, they leave the precise ways by which such support is generated unexamined. This paper extends these theories by shifting attention toward the mechanisms by which student success occurs. Using theories of student persistence and the extant evaluation literature, this paper has identified four mechanisms by which non-academic supports can improve student outcomes: creating social relationships, clarifying aspirations and enhancing commitment, developing college know-how, and making college life feasible.

Interrogating the processes by which students persist is an important theoretical step forward. It begins to provide the context for integration and commitment that has been largely missing, illuminating the conditions under which these processes might occur. By rooting the four mechanisms in research conducted with academically vulnerable students at commuter and two-year institutions, I have aimed to extend our knowledge about persistence processes so that students usually excluded from theories of persistence are better accounted for.

Further research is needed to confirm the mechanisms and their relationship to positive student outcomes. In addition, the precise way in which non-academic supports influence academic outcomes remains under-investigated. Non-academic support activities are frequently coupled with academic interventions, as in learning communities that combine a cohort model with interdisciplinary learning. Presumably, there is a magnifying effect in which non-academic assistance supports and amplifies academic interventions. But what is this effect, and how do we best capitalize on it?

We also need to develop a better understanding of how student perceptions of non-academic support influence their outcomes. As noted, little is understood about how students perceive efforts to improve their college outcomes, and even less is known about the relationship between these perceptions and the effectiveness of non-academic support activities. It is also unclear if the mechanisms work the same way for all students or if the non-academic supports needed varies for different types of students.

Even absent the answers to these questions, using a mechanism-based understanding of student persistence has immediate implications for practice. Current community college reforms intended to improve student outcomes are usually limited to implementing new programs, but these efforts have had little impact. A shift is needed. *Efforts to improve persistence should focus on processes, not programs.* As has been emphasized in this paper, merely participating in a program, no matter how well-intended, is irrelevant if the program itself is not well-implemented. Exposing students to the mechanisms is the key. The vehicle by which this is done is less important than that it occurs at all. In examining reform efforts, it is necessary that colleges look beyond programs to deeply interrogate their practices and determine whether or not students have the opportunity to engage in these four non-academic support mechanisms.

The need to shift our conception of non-academic support away from specific programs becomes clear when we look at some of the current popular community college reform efforts, which include interventions such as learning communities and enhanced advising. The research on these is in the balance positive or mixed, but at most the positive effects have been modest.

Why might programs aimed at encouraging persistence fail to promote positive student outcomes? Shifting our lens to look at mechanisms rather than programs, we can see how these reforms might result merely in “tinkering around the edges” rather than the establishment of environments that truly help students create relationships or gain essential information. Learning communities, for example, might put students into cohorts but fail to provide them with the opportunity to engage with one another in *meaningful* ways (Lichtenstein, 2005, for example, demonstrates that not all learning communities are created equal in either implementation or in outcomes). Enhanced advising might falter when advisors do not have the time or are not given the training to help students create clear, step-by-step plans for success or to help students develop their cultural capital. Student success courses are only as good as the curriculum they use—and much is not known about the content of these courses.

It is clear that creating the conditions that promote non-academic support mechanisms is challenging. A number of new practices, however, might be useful in doing so. All of these, it should be noted, are not program-specific. Instead, they shift the

delivery of information and the locus of relationship-building within a college through a variety of formal and informal activities, and in doing so help ensure that all students gain the opportunity to encounter non-academic supports.

The first is to *redesign advising and counseling so that it is both streamlined and personalized*. Students clearly need access to good information, and, as we have seen, current counseling structures and college budgets cannot support frequent individual advising sessions. But it is also clear that providing information to students en masse, through flyers or large orientation sessions, is ineffective, as students crave a “personal touch.”

Streamlining advising via expanded student success courses is one possible way to create information efficiencies while still promoting relationships. These courses can be used to give students information, such as program planning procedures and financial aid information, usually provided during advising sessions. Delivering this basic information to an entire classroom of students at once means that advisors should be freed up to address more individual and vexing issues in one-on-one sessions. At the same time, the fact that the courses meet over multiple weeks allow students to develop relationships with each other and their professors.

Technology might also be used to create efficient yet personal information sources. A well-developed and truly interactive website, for example, could relieve college counselors of many course-scheduling activities, freeing them to work more in depth with students in need. A word of caution is required here, however. Research is clear that students need a “human touch,” and students themselves tell us that they do not want more technology, they want human contact (Venezia, Bracco, & Nodine, 2010; CCSSE, 2009). Too much reliance on technology in this area may therefore be counterproductive, so such innovations should be implemented very carefully and thoughtfully.

A second promising approach is to *make non-academic supports intrusive so that students are forced to encounter them*. Students are often unaware of the non-academic help in which they are of need, particularly with regard to college know-how and clarifying their aspirations. Moreover, they may view the use of such support services as an admission that they “do not belong in college” or that they are somehow deficient.

Making non-academic support an integral part of every student’s experience means that all students will receive help, even if they think they do not need it. Moreover, it moves support services away from a deficit model and toward one that views all students as in need of some assistance.

Intrusive supports can come in a number of forms. Making participation in traditional non-academic support activities such as advising or student success courses mandatory is one way.⁴ Early warning systems, in which any student missing a certain number of class sessions or failing to receive certain grades is called by a counselor and offered assistance, is another. The key is to find ways to reach out to students before they are in dire need of help—before they even realize they need help themselves—and offer proactive assistance.

Another way to offer intrusive non-academic supports is to integrate them into the regular curriculum of academic subjects. College faculty can be “deputized” to be support personnel even as they teach, by being trained in pedagogies that encourage relationship-building and help students develop their cultural capital or college skills. For example, English faculty might be taught how to bring in lessons about cultural capital into their courses. 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. Contextualizing non-academic skills, particularly those such as study skills that are immediately applicable to the classroom, might also make them more relevant and useful.

Finally, as Judith Scott-Clayton (2010) argues, *creating more structure within the community college* could also encourage student persistence and success. Greater structure may reduce the need for intensive support by simplifying students’ choices and minimizing how many decision-points they encounter. Including the provision of non-academic supports as part of such a strategy—by organizing programs in ways that create cohorts or faculty-student relationships spanning multiple semesters—could also help ensure that such supports are widespread and easily accessed.

⁴ Of course, ensuring that these mandatory activities remain well-implemented even as they reach larger numbers of students is a key challenge.

This paper has sought to extend our understanding of the student persistence problem and fill in the gaps in the theoretical literature. The identification of four non-academic support mechanisms generates a picture of the conditions under which colleges can help students achieve their educational goals. Students—even those ostensibly academically prepared—need help in navigating the world of postsecondary education. Institutions can improve student outcomes by ensuring that non-academic supports promote these four mechanisms. The mechanisms can be implemented through a variety of formal support services as well as through informal systems. But it is essential that students be exposed to them—ideally through a broad strategy that structures such support into their daily lives as college students.

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Appendix

Table 1
Review of Empirical Studies

First Author (Year)	Intervention and Sample Size ^a	Study Design	Control ^b	Outcomes Examined ^c	Mechanisms Identified ^d	Summary of Findings/Conclusions
Bahr (2008)	Advising for remedial math students ($N = 34,217$) and transfer-seeking students ($N = 68,241$)	Comparison using controls (event history using HLM)	Race/ethnicity, math competency, English competency, age, SES, academic goal	Successful math remediation, transfer to a four-year institution	Clarifying aspirations and enhancing commitment	Advising associated with successful remediation and transfer. Effects significantly greater for students at the lowest levels of remediation.
Bensimon (2007)	College experiences of successful minority students ($N = 10$)	Life history interviews	N/A	Transfer to four-year institution	Creating social relationships	Minority students benefit from social relationships.
Boudreau (1994)	Student success course ($N = 643$)	Matched comparison (ANOVA)	Race, sex, high school grade point average, high school test scores, admissions status, major	Persistence, college grade point average, credits earned, academic standing	Developing college know-how	Participation in student success course related to improved retention.
Cox (2009a)	English Composition ($N = 33$)	Interviews and observations	N/A	Success in English Composition	Clarifying aspirations and enhancing commitment	Students view school through a utilitarian lens, but what they view as useful often differs from what professors view as useful.
Cox (2009c)	English Composition	Case studies, interviews, and observations	N/A	Success in English Composition	Clarifying aspirations and enhancing commitment	Students view school through a utilitarian lens and have an acute fear of failure. They respond to these fears with a variety of coping mechanisms that seem counter-productive to their academic success.

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Crisp (2010)	Mentoring (<i>N</i> = 320)	Structural equation modeling (MIMIC)	Gender, ethnicity, enrollment status	Integration, commitment, intent to persist, persistence	Creating social relationships	Mentoring predicts social and academic integration and institutional and goal commitment. Goal commitment predicts intent to persist. None of the variables in the model, including mentoring or integration, predict actual persistence, however.
Duquaine-Watson (2007)	College experiences of single mothers (<i>N</i> = 13)	Semi-structured interviews	N/A	N/A	Making college life feasible	Community college policies and practices can be unwelcoming to single mothers.
Engstrom (2008)	Learning community participation (<i>N</i> = 1,626)	Comparison using controls (regression), supplemented with site visits and student interviews	Age, gender, highest level of parental education, highest credential earned, US citizen, English as native language, ethnicity, engagement	Persistence to second year of college	Creating social relationships; Developing college know-how	Learning community students report having the opportunity to interact with peers and faculty members, and access to good information. Learning community students more likely to persist to their second year of college.
Grubb (2006)	Guidance and counseling in 15 community colleges	Case studies	N/A	N/A	Clarifying aspirations and enhancing commitment	Guidance and counseling practices in the community college are inadequate to meet the needs of underprepared students and inhibit student progress toward a degree.
Houghton (2001)	Workforce development programs (<i>N</i> = 4)	Case studies	N/A	Workplace cultural demands	Developing college know-how	Employers demand soft skills, but teaching them in a culturally-sensitive and effective manner is challenging.
Karp (2008)	Initial experience in community college (<i>N</i> = 36)	Interviews	N/A	Progress toward a degree	Creating social relationships; Developing college know-how	Networks of social relations are related to integration. Possession of cultural capital positively related to of student services and progress toward a degree.
Karp (2010)	Initial experience in community college (<i>N</i> = 36)	Interviews	N/A	Progress toward a degree	Creating social relationships	Access to information networks is correlated with integration. Integration is correlated with persistence to a second year of enrollment.

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Keenan (1995)	Student success course (four cohorts, <i>N</i> unstated)	Comparison of gain scores (ANOVA)	None	Career maturity, academic confidence, use of campus resources, grade point average, credits attempted/earned, retention	Clarifying aspirations and enhancing commitment, developing college know-how	Students in a student success course increase their career maturity, have greater knowledge of campus resources, and use resources more frequently than non-participants; no difference in academic outcomes.
Johnson (2009)	Adults with some college experience (<i>N</i> = 614)	Interviews	N/A	N/A	Making college life feasible	Students face a variety of daily challenges that inhibit their ability to earn a college degree.
Lichtenstein (2005)	Learning community (<i>N</i> = 320)	Non-equivalent comparison, supplemented with focus groups and surveys	None	Retention; grade point average	Creating social relationships	Students in learning communities characterized by supportive classrooms and strong interpersonal relationships have higher grades and retention rates than both students in learning communities that do not promote such connections and non-participants.
Metzner (1989)	Academic advising (<i>N</i> = 1,033)	Comparison using controls (regression)	Age; gender; ethnicity; high school performance	Dropout	Clarifying aspirations and enhancing commitment	Good advising, as rated by students, is negatively associated with dropout, through its ability to increase student satisfaction, grades, and sense of utility.
Nitschke (2001)	Job training in a community college	Case study	N/A	N/A	Developing college know-how	Employers demand soft skills and these need to be included in job training programs.
Rendon (1994)	Student experiences in college (<i>N</i> = 136)	Interviews	N/A	N/A	Creating social relationships	Positive, informal relationships with external agents encourage student success.

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Rosenbaum (2006)	Structural differences between private two-year (7) and community colleges (7), including interviews with faculty (<i>N</i> = 46) and students (<i>N</i> = 125)	Case study, faculty and student interviews	N/A	Teaching and learning of soft skills	Developing college know-how	Private two-year colleges are more likely to teach soft skills and cultural capital than community colleges.
Scott-Clayton (2011)	Structuring students' college experiences	Literature review	N/A	N/A	Developing college know-how	Students must navigate a complex environment and make myriad decisions in order to successfully earn a college degree.
Scrivener (2007)	Enhanced advising (<i>N</i> = 237)	Randomized	None	Credits attempted, credits earned, retention	Making college life feasible	Enhanced advising gives students individualized support; enhanced advising is related to some positive short-term outcomes.
Scrivener (2008)	Learning community (<i>N</i> = 1,534 for both comparison and treatment)	Randomized	None	College experiences	Creating social relationships	Learning community participants report a greater sense of integration and belonging on campus than do non-participants.
Scrivener (2009)	Enhanced advising (<i>N</i> = 1,073)	Randomized	None	Course registration; credits attempted and earned; course withdrawal; grade point average for program duration and four subsequent semesters	Clarifying aspirations and enhancing commitment	Enhanced advising is related to higher registration rates and number of developmental courses passed, but impacts do not persist over time.

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Tinto (1997)	Learning community participation (N = 121)	Comparison using controls (regression), supplemented with student surveys (simple comparison analysis with no controls) and site visits including student interviews	Age, marital status, high school grades, working while in college, receiving financial aid, parental education, degree aspiration, hours per week studying, perceptions of college environment, college involvement, college grades	Persistence to the second year of college, use of college resources	Creating social relationships	Learning community students access college resources to a greater extent than comparison students and report having supportive peer and faculty relationships. Learning community students are more likely to persist to a second year of college.
Visher (2010)	Enhanced advising (N = 1,067)	Randomized	Class characteristics, math placement exam score, age, gender, full/part-time enrollment, instructor	Math course pass rates, math course withdrawal rates, developmental credit earning, use of support services	Creating social relationships, clarifying aspirations and creating commitment	Program participants more likely to access support services; part-time and developmental math students have better short-term academic outcomes than comparison students.
Waldron (2007)	Learning community (N = 184)	Comparison using controls (ANOVA)	High school grade point average, high school class rank, SAT/ACT scores, gender, ethnicity, financial aid	Grade point average, first-year retention, credit earning	Creating social relationships	Students in learning communities report more opportunities to communicate with and access information from faculty and peers; learning community participants have higher grade point averages and retention rates than non-participants.

^aSize of the treatment group.

^bControls used when analyzing the results reported in this paper.

^cIncludes only outcomes reported in this paper.

^dMechanisms identified through inductive analysis for the purposes of this paper, not as part of the original research study.