

# Supporting College Transitions Through Collaborative Programming: A Conceptual Model for Guiding Policy

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**Background/Context:** *Recent educational policy developments have sought to raise the academic rigor of students' high school experiences to increase student preparation for postsecondary education. The expansion of credit-based transition programs (CBTPs), both in number and in the type of student served, represents one such strategy. These programs allow high school students to take college classes and earn college credit while still in high school. Despite policy makers' enthusiasm, there has been little theorizing about why CBTPs might lead to improved student access to, and persistence in, college. Further, because any policy created to support these programs lacks a theoretical foundation, unintended consequences may result.*

**Research Questions/Focus of Study:** *The research question guiding this study was, Through what mechanisms might credit-based transition programs encourage student success in postsecondary education? This article presents a conceptual model hypothesizing why and how CBTPs may lead to their intended outcomes. We then explore five CBTPs in diverse policy contexts. We describe the ways that programs are attempting to meet the needs of a wide range of students, and identify program features that appear to best prepare middle- and low-achieving students for postsecondary education.*

**Research Design:** *Five in-depth qualitative case studies were conducted. Two visits were made to each site, during which we conducted interviews and observations with faculty, staff, and students, and collected supporting documents. Interview transcript and observational data were uploaded into NVivo, a qualitative software program, for coding and analysis.*

**Conclusions/Recommendations:** *The case study data demonstrated that our initial conceptual model oversimplified program structure and the interaction among program components. The model was refined to reflect that complexity and to take student motivation into account. The final model hypothesizes that student participation in college coursework and*

*support services, along with the attendant growth in academic skills, knowledge of the social aspects of college, and motivation, will lead students to matriculate into postsecondary education. Moreover, because of their strong skills, students will be likely to persist in college once there.*

*Future research should seek to test this model. In the meantime, the findings have important implications for policy makers and educators because they suggest that middle- and low-achieving students may benefit from participation in CBTPs if they are properly prepared for, and supported in, their college courses. In addition, the findings stress the importance of collaboration and communication across secondary and postsecondary sectors.*

## INTRODUCTION

Recent educational policy developments have sought to increase the academic rigor of students' high school experiences. New policies include the implementation of more stringent state graduation requirements and the spread of high school exit exams, as well as myriad strategies to increase the college-going rate. Underscoring most policies is an assumption that all students—no matter what their academic background or stated educational goals—should be prepared and encouraged to pursue postsecondary credentials, and a concern with low postsecondary graduation rates.

This article explores one such strategy and seeks a theoretical rationale for policy makers' enthusiasm for it. Credit-based transition programs (CBTPs) allow high school students to take college-level classes and earn college credit while still in high school. They include Tech Prep, dual or concurrent enrollment, Advanced Placement (AP), International Baccalaureate (IB), and middle and early college high schools. Programs can vary along a range of features and may be singleton, comprehensive, or enhanced comprehensive (Bailey & Karp, 2003). Singleton CBTPs consist of elective college-level courses. Comprehensive programs include multiple sequential courses over a number of semesters or years. Enhanced comprehensive credit-based transition programs add intensive support services intended to address the social, personal, and academic preparation thought to be necessary for college success.

Proponents contend that CBTPs can smooth student transitions into postsecondary education by helping students acquire the academic and soft skills necessary for success in college (Adelman, 1999; Venezia, Kirst, & Antonio, 2003). Participating in these programs may motivate students to take more rigorous coursework because they can earn college credit, often without cost. Students may come to recognize that meeting the requirements for high school graduation is not the same as being ready

for college-level academics. They may also become accustomed to the demands of postsecondary education, thereby becoming more likely to persist in college upon matriculation.

Advocates also argue that, although CBTPs have typically served academically able and high-achieving students, middle- and even low-achieving high school students may benefit from participation (American Association of State Colleges and Universities, 2002; Lords, 2000; National Commission on the High School Senior Year, 2001). All high school students can benefit from some exposure to college, insofar as it helps them to understand its demands and work on acquiring the skills they will need to succeed there. Lower achieving students participating in CBTPs may also be less likely to need remediation than their peers because they will have been exposed to college-level academics. Thus, although these programs are not new, the idea that they should be accessible to a broader range of students represents a new approach.

Such arguments have been widely accepted by policy makers, who are seeking ways to raise the achievement of high school students and increase college persistence rates. Over 40% of postsecondary students need to take at least one remedial course upon entering college (U.S. Department of Education, 2004), a fact that policy makers often attribute to students' poor academic preparation for postsecondary education and low levels of rigor in the high school. Likewise, fewer than half the students entering postsecondary education in 1995 had earned a credential within 5 years (U.S. Department of Education, 2004).

Because credit-based transition programs are presumed to increase the rigor of the high school curriculum and prepare students for the demands of college, calls for their expansion have become increasingly common in the policy arena. In 2001, the National Commission on the High School Senior Year recommended "greatly expand[ing] the opportunities for high school students to experience the challenge of college-level work" (p. 32), including middle college high schools and dual enrollment. In 2003, the federal government proposed replacing the Carl D. Perkins Vocational and Technical Education, which supports high school and community college vocational programs, with the Secondary and Technical Excellence in Education Act. A cornerstone of this legislation was the expansion of dual enrollment opportunities for students in technical courses of study (U.S. Department of Education, 2003). Though the legislation was not passed, the Bush administration continues to call for greater participation in dual enrollment. The administration's proposed 2006 budget requested funding \$125 million "to increase access to dual enrollment for at-risk students" (U.S. Department of Education, 2005). Support for broad student access to credit-based tran-

sition programs has also come from the National Governor's Association (2005), the Michigan lieutenant governor (Cherry Commission, 2004), and think tanks such as Jobs for the Future.

Currently, 40 states have policies addressing dual enrollment (Karp, Bailey, Hughes, & Fermin, 2005). Early and middle college high schools are spreading rapidly, in large part due to support from the Bill and Melinda Gates Foundation. Tech Prep continues to be supported by federal funds, and the IB diploma program is offered by 426 high schools nationwide. Many of these initiatives are supported by state and federal policies. In 2002–2003, 87% of U.S. public high schools offered at least one credit-based transition program (Waits, Setzer, & Lewis, 2005).

However, little evaluative research has been conducted on CBTPs. The benefits described earlier are only presumed. There is even less information on the inclusion of middle- and low-achieving students in these programs because doing so is very new. There is some evidence that comprehensive and enhanced comprehensive programs may be more effective in meeting these students' needs than singleton programs (Bailey & Karp, 2003), but this research is very preliminary.

Moreover, there has been little theorizing about why CBTPs might lead to the outcomes that they are assumed to promote. Few researchers have sought to establish the means by which CBTPs may increase student access to, and success in, college. Thus, any policy created to support these programs lacks a theoretical foundation and may lead to unintended consequences.

This study contributes to the literature by presenting a conceptual model hypothesizing why and how CBTPs may lead to their intended outcomes, thereby providing guidance to policy makers seeking to increase successful transitions to college, particularly for middle- and low-achieving students. We explore five CBTPs in diverse policy contexts. Although research on program outcomes is needed, this study did not attempt to evaluate the impact of credit-based transition programs on students' postsecondary access and success. Instead, we sought to develop a deep understanding of the programs to better illuminate which outcomes they may encourage and why.

We describe the ways that programs are attempting to meet the needs of a wide range of students, and identify program features that appear to prepare middle- and low-achieving students for postsecondary education and facilitate their transition there. We draw on these findings to develop a conceptual model of CBTPs, which highlights the mechanisms by which the programs may lead to their presumed outcomes. This model provides a theoretical rationale for policies encouraging the spread of credit-based transition programs and provides policy makers and educa-

tors with information on ideal program implementation. It also can guide future evaluations of CBTPs.

## METHODS

The research question guiding this study was, Through what mechanisms might credit-based transition programs encourage student success in postsecondary education? To answer this question, we relied on qualitative methods. We completed in-depth case studies of five CBTPs, conducting interviews and observations with faculty, staff, and students and collecting supporting documents.

The sites were selected according to criteria that ensured that the programs were longstanding and actively sought to enroll and support middle- and low-achieving students. By “middle- and low-achieving students” we meant not only educationally disadvantaged students (English language learners [ELLs], members of some ethnic groups, and so on) but also those students whose previous academic performance might have traditionally precluded them from participation in credit-based transition programs. Thus, we sought out programs that actively targeted students who were not at the top of their class or with middling academic records, as well as programs that targeted minority, poor, or ELL students.

We wanted to understand the potential influence of credit-based transition *programs*—a series of courses taught over a number of semesters rather than a single college-level or college preparatory course. Thus, we purposely included only comprehensive and enhanced comprehensive CBTPs in our sample. As a result, CBTPs such as AP, which are typically taught using a singleton model, were excluded. Within the categories of comprehensive and enhanced comprehensive CBTPs, however, we selected a range of programs. Finally, we actively sought out programs that varied in their geographic location and demographic composition.

The site selection process resulted in the inclusion of five diverse credit-based transition programs. The sites were located in five states: California, Iowa, Minnesota, New York, and Texas. They included two dual enrollment programs (one with a career and technical focus), a middle college high school, an IB program, and a Tech Prep program. The five states had different policy contexts that likely influenced program features and implementation, but we do not address state policies here.<sup>1</sup> These programs are described in more detail in the next section. The specific research sites were given pseudonyms to ensure study participant confidentiality; however, the name of the general program is used in some cases.

Research was conducted at the sites in two phases. During the spring of 2004, a team of researchers visited each site for 3 days. We conducted interviews with program faculty and staff and observed classes and program activities. These activities focused on developing a deep understanding of the program. Interviews focused on program structure, student recruitment and selection, curriculum, support services, collaborative relationships, staff development, and students' experiences in the program. We also asked participants about the interaction between program features and state policy, their efforts to include a wide range of students in the CBTP, and their efforts to collect outcomes data for their students. Interviews lasted anywhere from 15 minutes to over an hour. Observations also varied in length, from 20 minutes to approximately 2 hours. Interviews were taped and transcribed for analysis, and notes taken during observations were written into narrative form.

After analyzing these initial data during the summer of 2004, the researchers returned to each site during the fall of 2004. These visits served three purposes. First, at some sites, we needed to conduct additional interviews to fill in gaps in our knowledge of the programs. More important, these visits allowed us to reinterview some of our original respondents in order to conduct a validity check and confirm our initial impressions of the program, as well as clarify any uncertainties. The second visits also allowed us to observe program stability and change. As with our initial visits, all interviews were taped and transcribed for analysis, and all observation notes were written in narrative form following the visit.

In total, we completed 118 interviews with faculty, staff, and students, and 61 observations of classes, support service activities, and professional development activities. A breakdown of the data collected by site is presented in Table 1.

**Table 1. Data Collected**

Site	Data Collected, Spring 2004		Data Collected, Fall 2004		TOTAL	
	Interviews	Observations	Interviews	Observations	Interviews	Observations
Southern California Middle College High School	21	6	8	4	29	10
Metropolitan Counties, Iowa, Dual Enrollment	25	2	6	5	31	7
Minnesota International Baccalaureate	9	19	7	3	16	22
New York City Dual Enrollment	16	10	5	2	21	12
Dallas, Texas, Tech Prep	13	6	8	4	21	10
<b>TOTAL</b>	<b>84</b>	<b>43</b>	<b>34</b>	<b>18</b>	<b>118</b>	<b>61</b>

Transcript and observational data were uploaded into NVivo, a qualitative software analysis program. NVivo allows for organization of data, inductive and deductive coding, and communication among multiple researchers during the coding process through use of a memo function. Using NVivo, the research team created a series of codes that reflected the broad themes addressed in the interviews. We then coded each transcript, conferring with one another when we were uncertain about the proper coding for an aspect of an interview. The analyses for this article focused on curriculum, student recruitment and selection, and support services. Interactions between these program features, within and between sites, were explored insofar as they contributed to student college preparation. Barriers to successful program operation were also explored.

Discrepancies in coding were addressed through a collaborative process during which we discussed disagreements and came to a consensus via dialogue. Throughout the coding process, we sought to identify emergent themes and findings. These were documented through the use of the memo feature in NVivo, short written summaries of findings along particular themes, and regular group meetings to discuss our impressions.

## THE SITES

Southern California Middle College High School (MCHS), located on the campus of its postsecondary partner, California Community College, was situated off a major street in a residential and commercial area of Los Angeles. Like most middle college high schools, California MCHS focused on providing disadvantaged and low-achieving students with academic and social preparation for college by giving them firsthand experiences on a college campus, offering opportunities to take college-credit courses, and creating a caring environment with small classes and close teacher-student relationships.

California MCHS enrolled students in Grades 9–12; in the 2003–2004 school year, 330 students were enrolled. That year, 44% of students were African American, and 56% were Hispanic. Seventy-two percent of students qualified for free or reduced-price lunch, though less than 1% of the student body was ELL or special education.

Students took high school courses at the MCHS and, when ready, enrolled in college-credit courses as well. These classes, taught by college professors and including regularly matriculated college students and MCHS students, were dual credit, meaning that they counted toward high school graduation and toward a college degree. Many MCHS stu-

dents received an associate degree at the same time that they graduated from high school. In addition, the MCHS helped students access support services offered by the college. California state policy expressed support for the middle college high school model. It also provided support for dual enrollment, thereby helping MCHS students to take classes at California Community College. Both the high school and the college received state funds for MCHS students enrolled in college courses.

The Metropolitan Counties, Iowa, dual enrollment program, also known as the Health Careers Academy, was composed of a partnership between Rural High School, Iowa Community College, and a local health care center, Regional Medical Center. The Health Careers Academy was one of 12 technically oriented dual enrollment programs overseen by Iowa Community College. It was located in a rural area outside a larger city. Because Rural High School was small, the Iowa dual enrollment program included students from multiple high schools in the area. Students met daily at either the Regional Medical Center or at a satellite campus of Iowa Community College.

In 2003–2004, students enrolled in the Health Careers Academy were 100% White, with no ELLs and only one student who qualified for free or reduced-price lunch. These student demographics generally mirrored those of Rural High School, which was 98% White and had no ELL students enrolled. Eighteen percent of Rural High School students qualified for free or reduced-price lunch.

The Health Careers Academy was a yearlong intensive course of study focused on preparing students for health careers. Students could earn up to 10.5 college credits and licensure as a certified nursing assistant, as well as high school elective credit. In addition to their college coursework, students were expected to engage in clinical practice at Regional Medical Center. They were also given opportunities to observe health care professionals, and access to college support services. Iowa state policy provided additional funds for technically oriented dual enrollment like the Health Careers Academy.

The Minnesota International Baccalaureate (IB) program was located in a large high school with a growing immigrant population in a major metropolitan area. It adhered to the standards of the International Baccalaureate Organization, offering students the opportunity to engage in rigorous liberal arts coursework. IB students took coursework leading to an IB diploma, which they could earn if they successfully completed externally developed and internationally recognized examinations in seven subject areas. High scores on IB exams could also exempt students from introductory coursework in college. In addition to diploma-level courses offered to 11th- and 12th-grade students, the Minnesota IB pro-



gram included a series of preparatory courses for 9th- and 10th-grade students.

The Minnesota IB program was an open access program, and students did not need to apply to enroll in pre-IB or IB courses. During the 2003–2004 school year, almost half of the school's 1,415 students participated in the program by taking at least one pre-IB or IB diploma course. The school was unable to provide data on IB students' ELL and free or reduced-price lunch status. Enrollment in the IB program varied somewhat depending on the grade level of the students, but in 2003–2004, it was approximately 15% Asian, 5% African American, 5% Hispanic, and 75% White. This differed substantially from the overall school population, which was 23% Asian, 19% African American, 9% Hispanic, and 48% White.

The Minnesota IB program partnered with other support services in the school to support middle- and low-achieving students, as well as minority and ELL students in the program. Minnesota state policy supported the IB program by providing funds for teacher professional development and student exam fees. In recent years, however, budgetary pressures significantly reduced this funding.

New York City dual enrollment program was operated through a partnership between New York City Community College and New York City High School. This partnership was one within the larger College Now program, which in its entirety was composed of all the City University of New York (CUNY) colleges and approximately 200 secondary schools. The goals of College Now included improving the academic skills and achievement of high school students and ensuring that graduating students are prepared to do college-level work. The colleges offered a tailored program of academic and preparatory courses and workshops to their partnering high schools.

New York City dual enrollment program offered a range of courses and services to students. At New York City High School, 169 students participated in the program during the 2003–2004 school year. Despite our repeated attempts to collect demographic data, the program was unable to provide us with such information on enrolled students. We do know that in 2003–2004, New York City High School's student population was 45% White, 11% Black, 21% Latino, and 23% Asian. Twenty-three percent of the students received free or reduced-price lunch, and 14% of new students were ELLs.

College-credit courses were offered to students who met New York City Community College's admissions requirements. For those students who did not fulfill these requirements (which could be met through state high school exit exam scores), New York City dual enrollment offered reme-

dial courses and an intensive program for ELL students, the Learners' Academy. These opportunities focused on preparing students for their high school exit exams and college enrollment. New York City dual enrollment also offered students a variety of support services, including field trips related to coursework and writing workshops. New York State did not have any policies pertaining to dual enrollment.

The Dallas, Texas, Tech Prep Program consisted of a partnership between Texas Community College, Dallas Tech Prep High School, and the Global Edge Tech Prep Consortium. Tech Prep was designed to link 2 years of high school and 2 years of community college coursework through a sequenced program of study in a career or technical field. At Dallas Tech Prep High School, students could enroll in course sequences in a variety of fields, including criminal justice, early childhood education, culinary arts, and information technology. As in New York City, we were unable to collect demographic information on Texas Tech Prep students despite our repeated requests. In 2003–2004, the student population was 2% Asian, 7% African American, 13% Hispanic, and 77% White. Fifteen percent of Dallas Tech Prep High School's student body was eligible for free or reduced-price lunch.

The Tech Prep courses offered through the Texas Tech Prep program were articulated with Texas Community College, meaning that the college oversaw the courses but did not automatically award college credit to students. Instead, students completing a Texas Tech Prep course had to enroll in Texas Community College and petition for their credits to be placed on their college transcript. The federal Carl D. Perkins Vocational and Technical Education Act of 1998 provided funding for the Dallas Tech Prep program.

As noted, the purpose of this study was not to explore the outcomes of students enrolled in these programs. We did, however, ask sites to provide us with any data they had on student postsecondary attendance and success. None of the sites followed their students after high school graduation, and thus they could not provide us with data on college enrollment and persistence. However, with the exception of Texas Tech Prep, the sites did have short-term outcomes data showing how many college credit participants earned while still in high school.

At California MCHS, 150 students enrolled in college-credit courses in the fall of 2004; 142 of them completed their courses with a grade of C or better. All the students at Rural High School who enrolled in the Health Careers Academy in 2003–2004 passed their courses, earning 10.5 college credits. In Minnesota, 75% of the 276 IB exams taken in the spring of 2004 had a score of 4 or higher (the score generally needed for a student to earn college credit). Seventy-eight percent of the 1,858 stu-

dents enrolled in college-credit courses through New York Community College's College Now program in 2003–2004 earned a grade of C or better (the college could not provide us with outcomes disaggregated by high school). Thus, it seems that these programs did provide students with the opportunity to earn college credit prior to high school graduation.

### INITIAL THEORETICAL FRAMEWORK

The goal of this research project was to develop a model that could guide future policy and that researchers could use to evaluate programs and their outcomes. The case studies were to be used to create a conceptual understanding of CBTPs and the ways in which program features might contribute to student success, particularly for middle- and low-achieving students.

Prior to conducting the research, the researchers developed a model hypothesizing the mechanisms by which CBTPs may promote student success. The initial hypothesized model relied on previous research on secondary-to-postsecondary transitions. Research indicates that students who participate in an academically rigorous high school curriculum are more likely to be successful in college (Adelman, 1999). Research also indicates that social preparation, such as learning the expectations of college or becoming familiar with a college campus, may help students persist in postsecondary education because many students drop out of college because of nonacademic factors, such as lack of integration or inability to adjust to a college environment (Sax, Keup, Gilmartin, Stolzenberg, & Harper, 2002; Tinto, 1987, 1997).

Therefore, the fundamental assumption made in the theoretical model is that CBTPs can help promote successful secondary-to-postsecondary transitions by preparing students for college, both academically and socially. A second proposition follows from the first: CBTPs meet the academic and social needs of students by implementing multiple, complementary program features. Though distinct, these features work together to help students enter and succeed in postsecondary education.

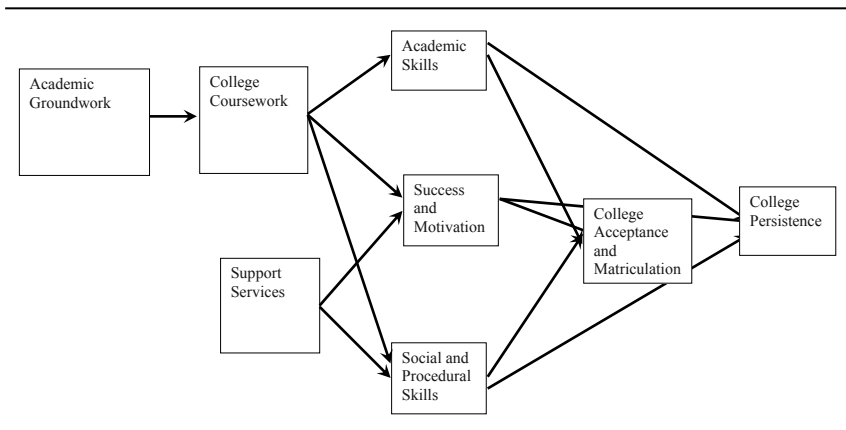
The initial model hypothesized that effective CBTPs give students a strong academic foundation for college-credit coursework. Academic groundwork may include rigorous high school courses or specially designed college preparatory classes. This coursework prepares students for the defining feature of CBTPs—participation in college-level courses. College classes further strengthen students' academic skills while helping them learn about other aspects of the college experience, such as understanding how to follow a college syllabus. While enrolled in college-credit

coursework, CBTP students ideally receive support services, such as counseling, mentoring, SAT preparation, assistance with college or financial aid applications, and college visits.

We hypothesized that together, college coursework and support services promote three elements necessary for successful secondary-to-postsecondary transitions. First, students' academic skills improve. Second, student success in a single college-level course may breed increased self-confidence and motivation, thereby encouraging students to apply to and matriculate in college. Third, students' exposure to the social and procedural skills required of college students (through both academic coursework and support services) will prepare them for college. In the end, a clearer understanding of the demands of college, coupled with academic success, is likely to show students that college is a realistic goal for them, thus increasing the likelihood that they will apply to, and enroll in, postsecondary education and be successful there.

The program elements included in this model were examined during the data collection and analysis so that the model could be refined upon completion of the project. Figure 1 presents a visual representation of the initial model.

**Figure 1. Initial Model of Hypothesized Influence of CBTPs on Student Access to and Success in Postsecondary Education**



## FINDINGS

### STUDENTS

Given this study's focus on the promise of expanding credit-based transition programs to low- and middle-achieving students, the student recruit-

ment and application procedures of the five programs were a particularly significant area of inquiry. Programs were selected for the study based on staff's assurances that they were accessible to a wide range of students. It is important to remember, however, that for some of the programs, the initial application process and procedures covered both general program and college course admittance (such as in Iowa and New York City), whereas in other programs, the initial application was for entry into the program, with an additional process necessary for college course enrollment (such as in California and Texas). Though a number of states have policies addressing student eligibility for dual enrollment, our focus on middle- and low-achieving students led us to purposefully select sites without such policies. Thus, the five programs were able to determine student eligibility themselves.

The screening and selection process varied from site to site, though all programs told us that they sought to include students from a range of academic backgrounds. In California, where there were many more applicants than spaces, the MCHS staff used a rubric to score and rank students' applications, looking carefully at GPAs, test scores, any discipline issues, and students' essays. In New York City, students who wished to enroll in college-credit-bearing courses had to have certain minimum test scores as required by the college. However, there were no admissions criteria for students entering the program through the non-college-credit-bearing courses. The Texas Tech Prep program had an application form that asked for students' GPAs and interest in the coursework; however, we heard that students were rarely turned away. Finally, students interested in the Iowa program simply registered for it, as did students wishing to take IB coursework in Minnesota. For the two career-themed programs, screening focused on whether the students showed a serious interest in the topic area. As the Texas culinary teacher said, he didn't want students who thought they were signing up for "Eating 101."

Who were the students participating in these programs? In general, it appeared that the students had to have some prior motivation. The Middle College High School's application process required students to plan ahead and write essays. The curriculum of the Iowa health program was intense and accelerated, and the clinical work required very early hours of the students. At Minnesota High School, it was common knowledge that the IB program required a great deal of hard work. New York City's dual enrollment program occurred after school, so students had to be able to handle additional coursework on top of their regular curriculum. As a school counselor there said, "I think the kids who are academically motivated and want to learn and want to take extra stuff, they hear it from their friends." The Texas Tech Prep courses were electives and so

were part of students' regular school day, but several of the concentrations required independent or off-site work, and earning the college credits required planning and follow-through.

When directly questioned about the students in the programs, many respondents said that they aimed to have a "mix" of students, or primarily students "of the middle range." However, the data showed some ambiguity regarding participating students' backgrounds and abilities. For example, whereas one teacher at the New York City site said that the program targets "middle-level students, the ones that I suppose are more likely to enter the community college system," he went on to say that in order to recruit students for the College Now classes he teaches, "I target probably some of the better classes in this school." Another teacher said, "I hate to say it, but it's the top of the class that winds up in these certain classes." At the MCHS, one respondent described the student population as including at-risk students, but another individual said that it did not. Thus, some contradiction was evident among our respondents' views of the kinds of students their programs were serving.

This can possibly be explained by the fact that four of the programs had recently been, or were at the time, making subtle adjustments to their recruitment and selection processes. The programs recognized as either being elite or having very specific entrance criteria, Minnesota IB and New York City dual enrollment, were attempting to broaden their student targeting, whereas the open access programs in Iowa and California were tightening up their screening processes somewhat. Each of the programs had specific reasons for its actions.

Although clearly an academically challenging program, Minnesota IB staff, and even students, characterized the program as "open to anybody." We were told that entry into the program was "self-selection"—that the decision to enroll was the individual student's, based on whether he or she wanted to be challenged. However, at the same time, staff and students were recognizing that despite the official open access policy, the racial and ethnic composition of the IB students did not reflect that of the school as a whole. It seemed that students who were already on an accelerated track in middle school were those counseled to enroll in IB. And if students did not enroll in the pre-IB courses early on, it could be more difficult to enroll in IB courses at a later time. In addition, as both students and staff noted, there was a comfort issue; a student said, "People have not taken AP or IB classes because they know they'll be the only one that's of color or of a different race, so they won't take the class."

Thus, there was beginning to be an understanding that an elite, nondiverse program, however officially open access, would be self-perpetuating without measures taken to specifically broaden the student population.

Therefore, program staff were making strong efforts at communicating with the counselors of incoming students to clarify the open access nature of the program and ask that they encourage all students to enroll in it. In addition, the IB coordinator was working with the coordinator of the school's Multicultural Excellence Program (MEP) to develop support systems for students of color in IB courses.

In the case of the New York City program, the coordinators wanted to ensure broad access by a high school population increasingly composed of immigrant and ELL students, although the college's requirements for enrollment in credit-bearing courses restricted access. As described below, the coordinators created a developmental sequence of courses with different entry points and beginning with non-college-credit-bearing courses open to any student. Thus, this program was making strong efforts to bring in students of all abilities and ready them for college coursework.

In contrast to these examples of attempts at broadening access, two other programs, the California Middle College High School and the Iowa Health Careers program, had become more selective or were considering doing so. There was widespread agreement among the staff of the MCHS that the student body had improved in recent years and was still improving. Conflict with the sponsoring college in previous years over disruptive and unprepared high school students likely contributed to the high school's more careful screening of students. As a high school administrator said,

I think the college kind of got tired of the kind of student they had here because they were hard to control in this open environment, and they weren't college material; they really weren't. And that wasn't the idea. They weren't preparing them to get to college; they were just kind of here and expected to go take some college classes, and it doesn't really work like that.

Similarly, the college partner of the Iowa program trusted the high school staff to adequately screen and select students. However, after incidents in the last few years in which students enrolled not out of genuine interest but because they saw an opportunity to leave the high school for part of the school day, the college coordinators, particularly the instructors, spoke in support of better screening. Thus, screening of students, or lack thereof, has implications for a smooth-running partnership between the high school and college partners.

In general, many respondents spoke against open access and in favor of screening to ensure that students would be successful in their college

coursework and not fail. In Texas, teachers spoke of the application process as determining a “good fit” so that students would succeed in the coursework. There, too, it seemed that a simple increase in demand for a program meant that teachers could more carefully select their students.

## CURRICULUM

Comprehensive and enhanced comprehensive credit-based transition programs, by definition, have multiyear curricula that encompass much of students’ high school experiences. Depending on the program, curricula may begin with high school courses and provide a developmental pathway culminating in college-credit courses. The exact structure of these pathways varies by program. Each of the five sites in the sample, however, had created some sort of multicourse curriculum culminating in college credit. It should be noted that by *curriculum*, we refer less to the actual subject matter covered in CBTP courses than to the sequence of these courses, their goals, and the ways that they ensure that all students are prepared for and have access to college-level coursework.

### *Three Types of Coursework*

The data indicate that CBTP coursework falls loosely into three categories. First, credit-based transition programs may include *high school coursework*. These courses count toward students’ high school graduation requirements by meeting state standards for math, science, social sciences, and English. They may also prepare students for college coursework by giving them the basic knowledge and skills necessary for success in college-level classes. For example, an English teacher at the California MCHS helped students learn how to research and write a research paper so that they would be able to complete similar assignments in college courses. High school coursework is the first step in preparing students for college-level work, particularly when instructors are aware of college expectations and infuse them into their classes. However, the primary purpose of this coursework is to enable students to meet the requirements for high school graduation.

High school courses may be enough to prepare students for college coursework. However, some students—particularly middle- and low-achieving students—need additional preparation for college coursework. To address their needs and to maintain access to college courses for a range of students, two of our programs established an intermediary series of courses. *Developmental coursework* is explicitly designed to prepare students for the demands of college-level work. Unlike high school



courses—which are first and foremost aligned to high school graduation requirements—developmental coursework is closely aligned with college coursework. For example, the Minnesota IB program established pre-IB courses in all subjects that prepared students specifically for their IB diploma courses. Similarly, New York City dual enrollment offered a number of developmental courses, all aimed at giving students the skills they needed to meet college course entry requirements. In our sites, developmental coursework was usually considered a high school elective.

Finally, as the defining feature of a credit-based transition program, all sites in our study offered students the opportunity to take *college-credit coursework*. At each site, the college partner (or international organization, in the case of the IB program) provided curriculum and instructional supervision for college-credit courses, though the control exerted by the college over curriculum delivery varied across sites. In some programs, such as the Iowa dual enrollment program, the college tightly controlled the curriculum by giving program instructors PowerPoint slides for each lesson and providing them with course materials. In other programs, the college gave the high schools more leeway in implementing course objectives. At Texas Tech Prep, for example, the college gave the teachers a set of outcomes that students should achieve but significant freedom achieving those objectives.

The location of college courses also varied among study sites. In one of the programs (California MCHS), students took their college courses on a college campus, with regularly matriculated college students. In New York dual enrollment, Texas Tech Prep, and Minnesota IB, courses were offered at the high school, with high school instructors given adjunct status or trained in IB curricula teaching the courses. (The exception to this was the Learners' Academy in New York, where students spent half their time at the high school and half at the college.) In the Iowa dual enrollment program, high school students comprised their own class, which met at a local hospital or a college satellite center. The instructor, however, was a college adjunct who was not a teacher at the high school.

### *Curricular Pathways*

Frequently, staff at the study sites spoke of arranging CBTP experiences in a stepwise fashion that moved students from one experience to the next in an ordered, progressively challenging manner. In each program in the study, students enrolled in multiple courses over a period of time ranging from 1 to 4 years. Staff were attentive to the order in which students enrolled in the courses, hoping to create a smooth sequence of curricula through which students could increase their college readiness.

In Texas, for example, it was hoped that Tech Prep students would engage in a sequence of courses that built their technical skills over multiple semesters. Program staff had outlined the progression of courses in which students should enroll so as to move through a sequential curriculum to meet their occupational goals. Similarly, the goal of developmental coursework in New York City and the pre-IB program in Minnesota was to move students toward college readiness by enrolling them in a series of increasingly challenging academic experiences. In Iowa, the Health Careers Academy curriculum was conceptualized as the first step in a series of courses that, after college matriculation, would lead to licensure and then a degree in a health-related field.

These course sequences can be thought of as *curricular pathways* that provide structure to students' academic experiences: clear routes that students may use to move from one level of coursework to another, linking high school courses to developmental courses and developmental courses to college courses. Students need not engage in each step of the pathway. A number of individuals in our sample indicated that curricular pathways can play an important role in helping CBTPs meet the needs of a range of students because they help students build their skills in a progressive manner. As the college coordinator of the New York dual enrollment program explained, "I think it is really important that we do whatever we can . . . to strengthen students' communication skills, particularly reading and writing. But not to do it in a quick fix way, but to do it . . . with an idea and a fix on sequential development."

Although every site in the study had some sort of curricular pathway, not all of them created routes leading from one level of work to another. In Texas, for example, the pathways were primarily between college-level courses; they did not link high school or developmental courses to college courses. Similarly, the California site did not always help students create logical progressions through their high school and college coursework. In fact, at both of these sites, students sometimes enrolled in high school courses *after* taking a college class. As a result, college courses were not a culminating or capstone experience for students, nor did the rigor of students' coursework necessarily increase over time.

The Minnesota IB program did have a curricular path to prepare students for the diploma program. However, this pathway did not include a developmental component that could help students enter the program after their 9th- or 10th-grade year. In fact, according to some study respondents, the curricular pathway served to discourage open access by creating unequal educational experiences for students within the school. Students who did not enter the pathway early in high school were unable to enter diploma courses because they did not have the proper back-

ground or skill set; according to an IB math teacher, “they just sign up for whatever their freshman year, and then in the sophomore year they decide they’d like to do more IB courses and then they run into a problem because . . . they don’t have the proper prerequisites.”

Through collaboration between the secondary and postsecondary partners, the New York City dual enrollment program had a curricular pathway that spanned developmental and college courses. Students could engage in a variety of developmental activities, as described earlier. They could then move to intermediate courses, which would prepare them for college general education classes. Each step in the pathway served a distinct purpose in preparing students for college-level work, and students who did not progress out of intermediate courses, for example, were probably better prepared for college than they would have been without any College Now activities. Moreover, because students did not need strong academic skills to enter the pathway, broad access to College Now was encouraged.

## SUPPORT SERVICES

The data analysis also focused on the types of support services that were available to assist students in their movement through the curriculum and toward college courses, and once in those courses. As illustrated in the theoretical framework, effective CBTPs likely address all aspects of the secondary-to-postsecondary transition. Nonacademic and academic support services seem to be essential in helping students understand and meet the demands of a postsecondary environment. Such services may be particularly important for students who had not been successful in school previously.

There was a great deal of variation in both the types and number of services offered to students in the different programs. In general, services varied along two major dimensions: (1) their sponsor, meaning whether they were offered by the high school, the college, or through a collaboration, and (2) their content—for example, whether services provided academic support, general personal support, or support for specific college-preparatory activities, such as assistance with college applications or financial aid.

All the postsecondary partners offered a range of services (the Minnesota IB program had no college partner), but students were limited in their access to them. Students in the Texas Tech Prep program were not officially considered college students and so could not use any college-based services. The Iowa Health Careers Academy students were considered students of the college and thus could take advantage of the

services offered, but there was no evidence that they did so, likely because of the distance to the college and some lack of effort by program staff to orient them toward college facilities.

Only in California and New York did the students make use of the support services provided by both the high school and the college. In particular, the co-location of the MCHS and California Community College meant that the program students could easily take advantage of the range of services offered. Significantly, not only could students in these two programs access the existing services of both the secondary and postsecondary institutions, but collaboration between the institutions' counseling staffs also brought about the creation of special activities for program students. Thus, some services were created especially for the CBTP students.

Reliance on only the high school-based services seemed unlikely to reinforce the strong college-going orientation that these programs were attempting to instill. For example, the New York City High School had one college counselor attempting to meet the college application counseling and paperwork needs of 700 seniors. For the specialized college-level health careers curriculum taught in the Iowa program, the high school could provide little in the way of academic support. In Minnesota, academic support services, such as structured study groups and review sessions, were provided to those in the upper levels of the IB program who were preparing for IB testing, but there was no focused support targeting those who might have been struggling in the beginning stages of the program. The Texas program offered the most striking example of one possible result of a lack of integrated college preparation services; a teacher in an IT program said,

I notice some teachers that still tell these kids, "Oh, you've got to go to a 4-year school." We're not into that. A couple of reasons, you know . . . just the statistics that tell us that less than 5% of the jobs where they require a 4-year education, so why spend the money? Plus we know that college is not for all kids. I mean, bottom line is a lot of kids start and never finish their first semester, let alone the first year. Let alone they, you know, get a 4-year degree. It's got to be what's right for them at their time, so, we try to—not steer them, 'cause it's got to be their choice.

As stated, there was also wide variety in terms of the content of the services available, particularly to the students in California and New York City. In California, students could acquire information at three different counseling centers on the college campus as well as the high

school counseling office. For example, one of the centers organized college visits; during a site visit, a busload of college and MCHS students was headed to UCLA for the day. The college's career center offered career self-assessments and information on internships and job openings, and all the high school homerooms were in the process of making visits to that center. There were also several structures in place to support students enrolled in college classes, such as regular progress reports that were required from the college professors, and a weekly Friday class during which high school teachers gave assistance to the students on their college coursework. In addition, collaboration between high school and college counseling staffs resulted in the creation of an industry-themed college-credit seminar that took place weekly in the career center.

In New York City, high school students enrolled in college courses could use the college facilities, and the high school-based College Now instructors regularly took their classes to the campus. The high school- and college-based program coordinators collaborated in a meaningful way to create activities that would support the students' academic learning and their personal growth. Many of the activities were targeted toward the students in the entry levels of the program to try to improve their skills and to encourage their continued participation. Some of the activities were field trips to cultural events that were tied into the content of the courses. For example, to complement a social studies curricular unit on capital punishment, students were invited to an all-day Saturday symposium at the college, where a representative from Amnesty International spoke and led a discussion with students.

From this brief description and analysis of the support services offered by the various programs, it is possible to see the added value that collaboration contributes. As with curriculum, when high school and college-based instructors and coordinators come together to determine students' needs and how to support their transition to college, the programs appear to be more cohesive and comprehensive.

## REVISING THE CONCEPTUAL FRAMEWORK

The data presented in the previous sections indicate that our initial conceptual model is inadequate. First, it oversimplifies program structure and the interaction among program components. The case study sites were extraordinarily complex, with components that met the needs of students at various, and multiple, points in their academic careers. The relationships among the components were not as linear as implied in the initial model.

Site visits revealed that preparing students for college coursework, and

college itself, begins long before students enroll in college-credit-bearing classes. The initial model indicated that the bulk of the impacts from CBTPs occurred as a result of college courses. However, the data indicated that much of the “action” comes prior to capstone college courses. Students have opportunities to gain academic skills, feelings of success and motivation, and learn social and procedural skills at multiple points in their CBTP experiences, and this learning may influence their future program experiences and ultimate program outcomes.

Though the initial model included multiple levels of academic preparation, it did not reflect the complexity of CBTP curricula. It lumped all preprogram curricula into “academic groundwork,” whereas our research indicated that courses laying the groundwork for college-level study take multiple forms. As outlined in Curriculum section of this article, students may develop a strong academic foundation in high school courses aligned with college curriculum, or through specially designed developmental courses.

The original model also underestimated the importance of student motivation. As noted earlier, students needed to be motivated prior to program enrollment to learn about and enroll in the CBTP. Although it is possible that participation in credit-based transition programs contributes to student motivation, the data also demonstrate that students seem to start out academically motivated.

Because this was an emergent finding, we were unable to explore students’ preexisting motivations in depth. We did ask student interviewees why they chose to participate in the CBTP. However, because the focus of this study was on the programs’ structures and practices rather than participants, we did not probe students’ responses in ways that would have let us investigate student motivation in detail. In addition, because we did not follow students into postsecondary education, we were unable to explore the way that this motivation plays out over the long term.

Thus, we are left with more questions than answers. Where does students’ preexisting academic motivation come from? What motivates them? Might this motivation, rather than CBTP experiences, be responsible for any positive postsecondary persistence patterns? Will preexisting motivation, coupled with reinforcement through the CBTP, influence students’ academic outcomes?

Future research should investigate the question of preexisting motivation in students participating in CBTPs and their college persistence. Researchers should refine our understanding of CBTP participants’ academic motivation to generate a clearer picture of the source of this motivation and how motivation interacts with program features to influence enrollment and persistence patterns. Evaluators of CBTPs need to take

student motivation into account when looking at program outcomes.

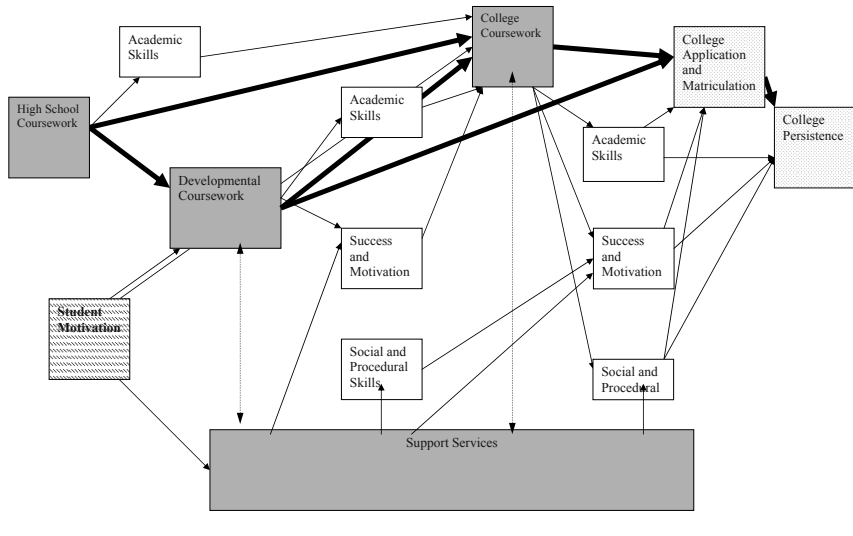
It should also be pointed out that our data cannot determine whether “motivation” is actually a proxy for other preexisting student characteristics. Our sites had difficulty providing us with enrollment data, and so we cannot be certain that the students in the CBTPs were actually the average-achieving and/or socially and economically disadvantaged youth whom the programs sought to enroll. In fact, as we have discussed, the elaborate application processes at many of the sites meant that, in all likelihood, participants were relatively high achieving and advantaged students as compared with peers in their high schools or neighborhoods. It is possible that we have interpreted parental encouragement, social capital, or other unmeasured characteristics as “motivation.”<sup>2</sup> Future research should obviously probe this in more depth.

The importance of motivation or other unmeasured characteristics of CBTP participants has implications for practitioners and researchers. If programs are truly going to enroll underserved students, programs must confront the fact that they unintentionally demand high levels of motivation. Current recruitment and admissions structures do not seem to sufficiently ensure that a wide range of students have access to CBTPs. Programs may have to actively enroll less motivated students or deliberately seek out students who have not demonstrated college aspirations in the past. In any case, future practice and research must account for our finding that, even in programs aiming to enroll disadvantaged and middle-achieving youth, program structures may discourage such students from enrolling.

The conceptual framework was revised to reflect these shortcomings. Though it is more complex than the initial framework, we believe that it is a more accurate representation of the structure of CBTPs and the mechanisms by which these programs may promote student matriculation and persistence in college. A visual representation of the model is presented in Figure 2. Student motivation, which precedes program participation, is indicated at the far left of the diagram. The data make clear that this motivation is a precursor to student enrollment in program features.

The program elements included in CBTPs are shaded in gray, and the desired program outcomes are indicated with small dots. Heavy arrows indicate student movement through the program elements. They illustrate that students move from high school coursework through developmental coursework to college classes, college matriculation, and college persistence. The multiple arrows leading to and from program elements indicate that students may traverse these program components in a

**Figure 2. Revised Conceptual Model of the Hypothesized Influence of CBIPs on Student Access to and Success in Postsecondary Education**



variety of ways given their academic needs, as discussed in the Curriculum section of this article.

These program elements are arranged in a curricular pathway, building students' skills over time. Given the findings presented earlier, this pathway should encompass high school and developmental coursework to meet the needs of a broad range of students. These courses should be aligned with college course entry requirements and begin to lay the groundwork for success in college. The curricular pathway should culminate in student enrollment in a college course.

In addition to preparing students for college-level work and helping them make the transition from one type of course to another, curricular pathways provide students with a clear set of expectations for entering college credit courses. Students know that they must achieve a certain level of preparedness or complete specific courses before they can be considered college ready. Thus, pathways, by setting clear standards and communicating what is expected of a student, potentially help all students, even those who will not be ready for college-credit courses during high school.

The clear boxes indicate the intermediate outcomes of CBTP participation, which are also the mechanisms by which student success in



college might be promoted. Program features lead to these intermediate outcomes, but these outcomes facilitate student participation in future program features as well. In other words, students develop academic skills and motivation through developmental courses. Increased skill and motivation help students transition into, and be successful in, college coursework, which in turn promotes more academic and motivational growth.

The elongated box along the bottom of the model illustrates the support services element of a CBTP. Unlike the original model, the revised model indicates that such services are offered to students throughout their program participation. The double-headed arrow linking support services to developmental and college coursework indicate the symbiotic relationship between these program elements. As noted earlier in this section, support services help students succeed in their courses, but the courses also help make support services more meaningful to students. In addition, support services lead to intermediate outcomes of their own by increasing students' understandings of the social and procedural expectations of college.

Ultimately, the model hypothesizes that student participation in college coursework and support services, along with the attendant growth in academic skills, knowledge of the social aspects of college, and motivation will lead students to matriculate into postsecondary education. And, because of their strong skills, students will be likely to persist in college once there. Although it is a complex model, it is possible that all the relationships contribute to any positive student outcomes. Future research should seek to establish whether this is the case, or whether some aspects of the model have a stronger impact than others.

#### CONCLUSIONS: LESSONS FOR POLICY MAKERS

The case study findings illustrate the need to include multiple components in credit-based transition programs. Particularly for middle- and low-achieving students, merely offering the opportunity to enroll in college-level coursework is likely not enough to encourage postsecondary matriculation and persistence. Instead, students need to be supported before and during their college coursework. CBTPs also need to provide students with multiple pathways through the program, such as a selection of precollege courses to build students' skills.

These findings have important implications for policy makers seeking to promote CBTPs that may improve student transitions to postsecondary education. The case study sites indicate that middle- and low-achieving

students may benefit from participation in CBTPs if they are properly prepared for and supported in their college courses. Thus, policy makers may want to reconsider policies limiting participation to only academically advanced students.

However, the findings also indicate that simply opening access to CBTPs may be an insufficient way to encourage student access to and success in college. We found that some sites were tightening up their admissions requirements to ensure that students were able to be successful in their college-credit courses. Moreover, the conceptual model emphasizes that middle- and low-achieving students need additional supports to benefit from the programs. These students should have access to a developmental curricular pathway that builds their skills over time, as well as access to support services to help them learn the nonacademic aspects of postsecondary education.

Current state policies addressing CBTPs very rarely address such program features (Karp, et al., 2004). Though policies do not prohibit curricular pathways and support services, they focus almost exclusively on college-credit courses. Thus, efforts at implementing comprehensive and enhanced comprehensive programs lack explicit support. Funding for the additional work entailed in developing such programs is not provided, nor do policies encourage the intense collaborative efforts required when developing pathways spanning secondary and postsecondary institutions. Thus, current state policies may serve as a disincentive to developing the types of programs that our research indicates should be supported.

Similarly, state policies tend to focus on the academic aspect of secondary-postsecondary transitions. In doing so, they ignore the social and procedural aspects of postsecondary education. Policy makers should consider authorizing additional funding for the establishment of college-based workshops, or stipulating that CBTP funding go only to programs that include support services in addition to academic coursework.

Perhaps the most important conclusion for policy makers to take away from this research is the importance of collaboration and communication across secondary and postsecondary sectors. The conceptual model proposed here is highly reliant on close relationships between high schools and colleges; this, too, is an area where current state policies are silent. Aligning high school and developmental curricula with college expectations is predicated on strong communication and collaboration among program and preprogram instructors. Widespread communication about program demands and curricular pathways is an important way to help faculty give all students the tools they need to enter a CBTP

pathway. Support services created and provided jointly by secondary and postsecondary partners seem to be more effective than those delivered by a single institution. Thus, CBTP policy should seek to create environments in which faculty work collaboratively.

In addition to supporting effective CBTPs, policies supporting collaboration between secondary and postsecondary faculty may also provide a context for a critical rethinking of the high school curriculum by engaging secondary teachers with the demands that colleges place on their students. An end result could be that all students—whether enrolled in the CBTP or not—engage in activities that prepare them for college-level work. Such widespread collaboration, and its potential impacts, mirrors the goals of the larger K–16 movement, in which high schools and colleges are encouraged to work together to align their curricula and standards to create a seamless education system for all students.

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### *Notes*

1 For more information on state policies addressing dual enrollment, see Karp, Bailey, Hughes, and Fermin (2005).

2 We thank an anonymous reviewer for this point.

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