

Community Colleges and Higher Education

How do State Transfer and Articulation Policies Impact Student Pathways?

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May 29, 2008

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CRPE working paper # 2008-4

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Abstract

This paper reviews state cross-institutional policies designed to better integrate state community colleges with traditional four-year colleges and university system schools, commonly referred to as 'transfer and articulation policies', and examines how patterns of college attendance, transfer, and degree earning vary across states with different policies.

While a descriptive analysis such as this can not confirm whether the policies actually change students' behavior, our findings of a positive (though not consistent) association between state policies and student post-secondary attendance and transfer rates give good reason to continue exploring the role of these policies in students' post-secondary decisions and successes.

Keywords: post-secondary; student mobility; state policy; community college.

Acknowledgements

The authors gratefully acknowledge the Lumina Foundation for Education – an Indianapolis-based, private foundation dedicated to expanding access and success in education beyond high school – for its generous support of this project. The authors would also like to thank Jan Ignash and Barbara Townsend for their willingness to share their survey data, and Carol Wallace for her editorial assistance. The views expressed in this paper do not necessarily reflect those of the University of Washington or the study's sponsor. Responsibility for any and all errors rests solely with the authors.

Introduction

The labor market has increasingly demanded college degrees from workers, and the demand for higher education has grown accordingly: the number of students expecting to attend post-secondary college is higher now than at any other point in history (Kirst and Venezia 2004). In this movement toward higher education, community colleges have assumed a more prominent role in the higher educational system. According to the National Center on Education Statistics (NCES), as of 2005, community colleges made up almost two-fifths of degree-granting institutions in the United States, an increase of nearly 10 percent from 1950 (U.S. Department of Education 2007). Similarly, the share of undergraduates attending community colleges increased from 27 percent in 1970 to 37 percent in 2005. Community college enrollment has nearly doubled over the past three decades compared to all other postsecondary institutions, which grew by 76 percent during the same time.

Community colleges are also an important point of entry to higher education for minority and low-income students. For instance, NCES reports that in 2005, minority students represented 36 percent of community college students compared to 27 percent of students in four-year institutions. Lower tuition costs also make community colleges a more-affordable option: the 2005 average undergraduate in-state tuition at a four-year institution was \$10,280 compared to \$2,420 at two-year schools – a difference of \$7,860.

In the 1980s states began to develop policies that would better integrate state community colleges with the traditional four-year college and university system schools. These policies took the form of cross-institutional agreements to align curriculum and degree requirements and monitor the flow of students across institutions. While higher education researchers have examined the structure of and stakeholder participation in these policies – commonly known as

‘transfer and articulation’ policies – we still know very little about their *impacts* on students’ higher educational experiences or outcomes. In this paper, we review these transfer and articulation policies, and examine how patterns of college attendance, transfer, and degree earning vary across states with different policies. While a descriptive analysis such as this can not confirm whether the policies actually change students’ behavior, our findings of a positive (though not consistent) association between state policies and student post-secondary attendance and transfer rates gives good reason to continue exploring the role of these policies in students’ post-secondary decisions and successes.

Springboards and Cushions: The Role of Community Colleges in Higher Education

Community colleges hold tremendous potential to expand access to higher education not only as degree-granting institutions in their own right, but also as a springboard to traditional four-year institutions for their students. Drawn to community colleges by their open enrollment policies, flexible scheduling, geographic dispersion, lower costs, and opportunity for skills remediation, nearly 6.3 million students are enrolled in more than 1300 public two-year colleges (U.S. Department of Education 2005, 2006); this number represents about 45 percent of all students enrolled in post-secondary education (Kirst 2007). A disproportionate share of community college enrollees are low-income and minority students (Goldhaber and Kiefer 2007).

Despite the growing use of community colleges, degree attainment continues to elude many of these community college students. Recent data show that only about 26 percent of students who begin in a community college actually complete *any* degree within five years (Rosenbau, Deil-Amen, and Person 2006). Other research shows that, holding student characteristics equal, students who begin at four-year schools instead of two-year schools are

more likely to complete a bachelor's degree (Townsend 2001; Rouse 1995; Kane and Rouse 1999). Together, these findings indicate that the benefits of expanded access have yet to be fully realized by students. To ensure that more students not only access higher education, but also reap the benefits of this access, more community college students need to complete degrees—especially bachelor's degrees, which garner the greatest benefits in the labor market.

The failure to complete degrees is not due to students' low aspirations. Kirst (2007), reporting on 2002 research from the American Council on Education, remarks that nearly 72 percent of students attending community colleges hope to earn a bachelors degree. Rosenbaum, Deil-Amen and Person (2006) examine the *Beginning Post-secondary* (BPS) survey and report that, among students who enrolled in community colleges just after high school with aspirations of an associate's degree, nearly 43 percent dropped out and only 29 percent either earned or still aimed to earn an associate's degree within five years of leaving high school. Of those students who started at a community college with aspirations of transferring and completing a bachelor's degree, 37 percent had dropped out and less than half (41 percent) completed or still aspired to earn a bachelor's degree five years after leaving high school; success rates were lowest for African American and Hispanic students.

Rosenbaum, Deil-Amen and Person (2006) argue that these failures result from weakness at the student level, school level, and system level. A variety of student-level concerns—ranging from inadequate high school preparation (Kirst and Venezia 2004) to personal motivation to financial and family responsibilities—are among the reasons that college students drop out of their programs (Bonham and Luckie 1993; Nora et al. 1996). At the school level, community colleges challenge students with complex requirements but offer little guidance in navigating them; staff their faculties with largely part-time, adjunct faculty who are not compensated for

extra time spent advising or working with students; and operate under multiple and, at times, competing missions (Rosenbau, Deil-Amen, and Person 2006). Finally, when discussing state-level policy and expanding access to four-year institutions, we must remember that students hoping to use community college as a springboard to a four-year institution face not only the challenge of becoming academically prepared for success in a bachelor's program – often from a remedial starting point – but also the challenge of doing this in the context of inconsistent requirements from school to school; non-comparable curriculum in core classes between two-year and four-year schools; and a series of bureaucratic requirements that obstruct the transfer process (Ignash and Townsend 2001).

Community colleges are not only important to students who begin their higher education at these two-year schools: increasingly, community colleges have been serving 'reverse-transfer' students (those who leave four-year schools and return to two-year schools) and returning-adult students who are seeking additional training. While transfer and articulation policies likely have minimal connections to or impacts on returning-adult students, as they are not transferring, reverse-transfer students would certainly benefit from formalized transfer and articulation agreements that could help to preserve the credits they have already earned. Students likely reverse-transfer for a variety of reasons, including the lower costs of community colleges and poor academic performance at a four-year school (Yang 2006). Some forms of reverse-transfer seem to be more strategic and temporary—such as taking required courses at a community college in the summer, concurrently enrolling in a community college and a four-year college, or enrolling in community colleges for additional credits after earning a bachelor's degree (Townsend 2001).

However, a growing number of students are also making more permanent transfers to community colleges from four-year institutions. Yang (2006), summarizing previous research on reverse transfer students, explains that these students tend to have weak academic skills or poor “social integration.” These previous empirical studies point to middle-class socioeconomic status, part-time enrollment, educational aspirations below a master’s degree, and limited financial aid as factors associated with greater rates of reverse-transfers. Concerns over the consistency of curriculum and requirements across two- and four-year institutions is equally important to these students, as they can ill-afford to lose credits in the transfer process.

Improving the Pipeline Between Two- and Four-Year Institutions

In the mid-1980s, a number of states enacted agreements that: 1) articulated curriculum across their publicly funded, two-year community colleges and four-year colleges and universities, and 2) facilitated the transfer of students across these institutions. Such coordination between two- and four-year colleges clarifies the pathways for students wishing to use community college attendance as a bridge to eventually transfer to a four-year college (Anderson, Mariana, and Sun 2006). Policies governing the transfer of students across institutions and the articulation of higher education curricula, particularly in core subject areas, can include several different components including incentives to transfer (e.g. financial assistance, guaranteed acceptance); common general education requirements; common general education core; common requirements for program majors; or common course numbering for courses of similar content.

The Education Commission of the States conducted the most recent survey of transfer and articulation policies in 2001, and found that 30 states had some type of formal transfer and articulation policy written into legislation. The most common policy elements among these states

are data collection systems to monitor transfer (23 states); statewide articulation guides providing concrete descriptions of the transfer process (17 states); and a common set of core courses (16 states). Thirteen states with a legislated agreement provide extra incentives to encourage transfer, such as financial aid, guaranteed transfer of credit, or priority admission; and only 4 states have implemented a common core numbering system. States that have only cooperative agreements, formulated on a department-to-department or institution-to-institution basis, are far less likely to have these elements.

The association between state transfer and articulation policies and student aspirations and post-secondary attendance patterns is not immediately obvious. On the one hand, the intentional effort to improve coherence among higher educational institutions might mean that more students not only aspire to use the two- to four-year pathway, and actually exercise the pathway by transferring from two- to four-year schools, but also succeed in this pathway by graduating with a bachelor's degree. Therefore, we might see high numbers of students aspiring to and making use of the two- to four-year pathway in states with transfer and articulation policies. On the other hand, we might expect states to respond to students' enrollment patterns by either adopting policies to accommodate high numbers of students aspiring to or using the two- to four-year pathway or to adopt policies to encourage students toward this pathway.

In this paper, we examine the relationship between these policies and the higher education attendance, transfer, and completion rates of students who spend at least part of their higher education in community colleges. We begin by exploring whether states with legislated policies see more students enrolling in two-year colleges and more students successfully transferring across institutions. We then examine whether states without legislated policies seem to be responding to high two-year enrollments by adopting transfer and articulation policies.

Unfortunately, our data do not allow us to test whether states are adopting policies to encourage students to take the two- to four-year pathway. As previously noted, these analyses cannot tell us whether the policies caused a change in student enrollment or if student enrollment caused a change in the policies. Instead, we illustrate where possible associations between the policy and student post-secondary enrollments might exist, in an effort to guide future research.

Data on Students and Policies

We use two sources of data to examine the relationship between states' established curriculum articulation and transfer agreements, their impacts on the students' use of transfer pathways, and the extent to which degree attainment is successful: the *National Educational Longitudinal Study* 1988 to 2000 data (NELS88/2000) and the NELS 2000 Follow-up, and the *1999 Survey of State-Level Transfer and Articulation Policies* conducted by Ignash and Townsend.

First, student data on post-secondary career paths is drawn from the NELS88/2000. The NELS survey includes detailed information on high school and postsecondary educational experiences. Beginning with a nationally representative cohort of students in the 8th grade in 1988, the NELS follows these students with subsequent surveys in 1990, 1992, 1994, and 2000 and logs their educational aspirations, academic experiences, and labor market experiences during these years. The NELS 2000 follow-up (with 12,144 respondents) includes information on students' initial college attendance, course taking, and degree attainment, with just over 40 and 50 percent of the entire sample reporting that they attended a two- or four-year college, respectively. These data follow students through their high school and post-secondary experiences, and allow us to examine how transfer and articulation policies potentially impact their decision to attend a community college or four-year institution.

The typical student in the NELS cohort graduated high school in 1992, making it important for us to capture the transfer and articulation policies present in states in 1992. Unfortunately, there was no systematic survey of these policies at that time. However, in 1999 Ignash and Townsend conducted their *Survey of Stat-Level Transfer and Articulation Policies*, and were able to gather information from 43 of 50 states. This survey asked about *legislation* regarding transfer and articulation; institutional *cooperative agreements* between two- and four-year institutions; *unified reporting* of transfer data; *student incentives* for transfer from a two- to four-year institution; *statewide curriculum articulation* with common course descriptions; core curriculum; and course numbering systems. As they collected information on the various aspects of states policies, they also asked respondents to pinpoint when their state's agreement was implemented. From the 1999 policy status and information regarding the origin of the policy, we inferred the status of the state's policy in 1992. In **Table 1** we report the 1999 policy status as specified by Ignash and Townsend (2001) as well as the inferred 1992 status for all states with available data. States that are categorized as having a policy in 1999 but not in 1992 were those that reported having a policy in the 1999 survey but also reported that it went into place after 1999.

Ignash and Townsend offer several ways to consider the transfer and articulation policies in each state. First, they indicate with a simple binary indicator which states have formal transfer and articulation agreements (e.g., institutional agreements or state legislation). Second, they evaluate the strength of these agreements based on: (1) the types of transfer, scope of participating institutions, and percentage of undergraduates covered by the agreement level of authority for policy (e.g., 2- to 4-year transfer for public institutions only); (2) the level of faculty involvement in developing agreements (e.g., "very involved" to "not at all"); (3) the presence of

transfer components specifying curriculum alignment (e.g., common general education requirements, common course numbering, or common requirements for majors); and (4) the state's effort to monitor/evaluate transfers (e.g., data collection or anecdotal). Ignash and Townsend rank states on a scale of one to five, with the strongest agreements earning a five. In addition to these broad policy indicators, Ignash and Townsend provide indicators of four specific components related to curriculum alignment, including common general education requirements, common core courses, common course numbering, and common courses for program majors. Finally, they provide an aggregate indicator of the overall strength of these articulation components.

Table 1 shows the number of responding states with formal agreements in 1992 and 1999 by policy strength and policy components (see Appendix A for state-level comparisons). Eleven states adopted new policies between 1992 and 1999. This increasing formalization of policies across the country echoes the growing importance of community colleges in post-secondary education.

Using these four different ways of characterizing states' transfer and articulation policies and a cross-section of students from the NELS, we explore whether the states' policies are associated with the rates at which students opt into two-year colleges and successfully transfer from a two-year school to a four-year institution.

Results

This section provides a descriptive account of the post-secondary attendance of states' students as it relates to the state's transfer and articulation policy. We begin by exploring our first hypothesis: *States with formalized transfer and articulation policies will see more students aspiring to and using the two- to four-year pathway.* We present this information in an order that

parallels the students' post-secondary decision-making process, beginning with a look at students' aspirations leaving high school, students' initial post-secondary selections, the extent to which their aspirations change a few years out of school, and finally their success in transferring to a four-year institution. As we explore each stage of the students' post-secondary experience, we examine whether (1) the presence of an agreement, (2) the strength of the overall agreement, (3) the individual curriculum articulation components and/or (4) the strength of the articulation components are associated with different student behaviors. We conclude by discussing the plausibility of our second hypothesis: *The attendance pattern of students possibly prompts states to adopt transfer and articulation policies*. Specifically, we explore if states that adopted policies between 1992 and 1999 showed higher two-year attendance than states that did not adopt policies by 1999.

Picking a pathway

If transfer and articulation agreements ease the burden and uncertainty of transferring from a two-year to a four-year college, we might expect to see more students opting for this pathway. As indicated above, the average cost of a public two-year degree is just over \$2,400 while a four-year degree costs about \$10,000 – or \$5,000 for the first two years if students take consistent credits across the four years. Completing the first two years of a bachelor's degree (BA) at a two-year college offers considerable financial benefit, making this a compelling option for lower-income students. In addition, this pathway gives students the opportunity to 'make up' for poor academic performance in high school, thus potentially opening post-secondary doors for those who otherwise would not have pursued formal education after high school. We examine the relationship between state policies and the initial post-secondary decisions of students with two indicators (1) the overall share of students exiting high school that first enroll in a two-year

college and (2) the share of students aspiring to a BA who begin their pursuits in a two-year college. The first indicator shows students' *general use* of the two-year institution, while the second indicator shows the extent to which students view the two-year college as a reliable *springboard* to a BA degree.

Statistics presented in **Table 2** show that states without transfer and articulations agreements have both higher general use of two year colleges and a higher share of students enrolled in two year colleges for springboard use than do states with agreements – a result that contradicts our expectations. Specifically, 40 percent of students in states without agreements enrolled in a two-year college, compared to only 36 percent of students in states with agreements. In looking at just the share of BA-aspiring students who begin their pursuits in a two-year school (potential springboard students), we see that two-year enrollment is somewhat higher in states without agreements (30 percent, versus 25 percent in states with agreements).

When we classify agreements based on the overall *strength* of the policy some differences among classifications emerge, and to a small extent we see our hypothesized pattern: stronger agreements correspond with more students initially opting to enroll in two-year colleges. Except for those states with the strongest agreements and with weak or no agreements, as the strength of the policy increases from fairly weak to fairly strong we see a higher share of students in general beginning at two-year colleges, and a higher share of students aspiring to a BA beginning their post-secondary education in two-year colleges. Curiously, however, students in states with the strongest agreements are less likely to enroll in two-year schools generally or for the springboard pathway than students in states with somewhat weaker agreements. This rather unexpected result would make sense if states were in fact adopting agreements that

explicitly encourage students to use the two- to four-year pathway. Unfortunately, the available data do not allow us to test this possibility.

When we look at differences across states in the general and springboard use of two-year colleges as they relate to the *articulation components* of the policies (common general education requirements, common core courses, common course numbering and common program areas) and an aggregate indicator of the strength of these components, we find substantial differences in two-year attendance only when comparing states that have general education requirements to those that do not. Counter to our hypothesis, states that specify common core educational requirements across institutions have 9 percent *fewer* students opting to begin their college education in two-year colleges and 9 percent *fewer* BA-aspiring students opting for the springboard pathway. Much like our findings on the overall strength of the state's policy, we find only modest evidence that the aggregate indicator of articulation policies is associated with the percent of BA-aspiring students who enrolled in a two-year college, with states that implement moderate and fairly strong articulation components seeing a higher share of BA-aspiring students attending two-year colleges.

Taken together, the statistics described above provide weak evidence that transfer and articulation agreements, particularly stronger agreements with stronger articulation components, are associated with higher use of two-year colleges—both generally and as a springboard to a BA degree. There are several possible explanations for these counterintuitive findings. First, states may be adopting policies as a way to influence the behavior of students. That is, states with the strongest agreements may have implemented these in an effort to encourage more students to pursue this pathway, a consideration we will explore later in the paper. Second, it is easy to argue that policies targeting the process of transferring may not be that influential in this

early-stage decision. It is certainly possible that in states with strong agreements, counselors may be more likely to encourage students to consider the two- to four-year pathway and there may be a greater acceptance of this pathway. Realistically, however, many students may not be aware of the existence of these policies, and may not understand the barriers to transferring that might exist in their absence or the benefits to transferring where these policies exist. As such, these policies may not enter into students' early-stage post-secondary decision making, but may play more of a role in students' later decisions to transfer and their ability to earn a degree after transferring – something we explore in the next section.

Succeeding in the pathway

While these policies may only indirectly influence students' decisions to initially enroll in a two-year college, they do have a direct impact on the ease with which students can make the leap from two-year to four-year schools. Common core requirements and course numbers may help ensure that those planning to transfer become adequately prepared for the academic programs of four-year schools while attending the community college, and likely help to minimize the loss of credits in the transfer. With these benefits, it is reasonable to expect that more students in states with agreements—and specifically stronger, more-comprehensive agreements—would be more apt to transfer between institutions. Further, more transfer students in these states might actually succeed in attaining a BA degree.

To examine patterns in the use and success of the transfer pathway, we examined four different indicators of students' use and success in transferring including: (1) the percent of two-year students transferring to four-year institutions, (2) the percent of two-year students who aspired to a BA who transfer, (3) the percent of students who *did not* aspire to a BA but did transfer – often called 'warming up', and (4) the percent of two-year students who transferred

and earned a BA by 2000. **Table 3** presents our findings on these indicators, and provides some evidence to support our expectations that transfer and articulation policies relate to students' use of and success with the transfer pathway. Moreover, we find interesting evidence that more students may 'warm up' – that is, increase their aspirations – in states with transfer and articulation policies.

Interestingly, the relationship between having a policy in place, the strength of the policy, and student transfers, is no clearer than the one described in our discussion of initial enrollments. Simply distinguishing states as having or not having a policy yields no significant differences, but we do find some evidence that a stronger overall policy corresponds with more transfer students. Looking across states with “fairly weak,” “moderate,” and “fairly strong” policies, the share of two-year students transferring is higher in states with moderate and fairly strong policies (30 percent) than in states with fairly weak policies (21 percent). Among two-year students who initially aspire to earn a BA degree, we again see that states with moderate and fairly strong agreements have more students transferring than do states with weak policies, but the pattern is very inconsistent: moderate states have a substantially higher share of students transferring (43 percent) than do states with fairly strong policies (36 percent). Moreover, as we saw when looking at two-year attendance, states classified as having the strongest policies defy expectations and have considerably fewer transfer students than states with weaker policies.

It may be that factors such as the range and types of institutional participants, state monitoring efforts, or the mechanisms for facilitating student transfers are not entirely relevant to students as they transfer; it might be more important to focus on just those elements of the policy that matter to the students – specifically, the articulation components. Looking first at an aggregate indicator of the state's articulation components, we find a systematic relationship

between the strength of the components and the share of students making transfers. For example, states that have moderate to fairly strong articulation components to their agreements have higher shares of their students transferring to four-year schools (32 percent and 30 percent, respectively) compared to states with fairly weak components (20 percent) and weak/no policy (28 percent). If we look only at two-year students who aspired to earn a BA degree, states with moderate to fairly strong articulation components have 42 percent and 40 percent of these students transferring to four-year schools, respectively, while only 29 percent transfer in states with fairly weak articulation components. Interestingly, none of the individual transfer components stand out as being associated with high rates of transferring for the total two-year population or for those who originally aspire to a BA degree.

A particularly interesting finding, however, is that community college students who did *not* aspire to earn a four-year degree were *more likely* to transfer to a four-year school in states with stronger transfer policies—that is, these states saw higher rates of ‘warming up.’ Simply comparing states with and without an agreement in 1992, 16 percent of community college students transfer to four-year schools in states with an agreement compared to 10 percent in states with no agreement. In terms of overall agreement strength, transfer rates are higher in states with fairly strong policies relative to states with weaker policies – though the rates of warming up do not increase consistently with policy strength. Similar patterns emerge when we compare two-to-four year transition rates by the presence and strength of states’ articulation components. States with common general education requirements, common core courses, and common course numbers see higher rates of warming up. In general, these findings suggest that once students enter two-year schools, they may be exposed to mechanisms that are set up to move students through the two- to four-year pathway, and faculty who express expectations that

these pathways will be taken and who may advise students to pursue a BA degree – a situation that Rosenbaum, Deil-Amen and Person (2006) argue is important for helping students successfully transfer.

While states with stronger formalized transfer and articulation agreements appear to have higher transfer rates in general, and particularly among community college students not expecting to earn a bachelor's degree, there are few observed (or consistent) differences in the percentage of transfer students who earn a bachelor's degree. Across all the transfer agreement dimensions (e.g., state agreement or not, strength of overall agreement, strength of transfer components, etc.), the percentage of two-to-four year transfer students earning a four-year degree remains relatively flat, hovering between 53 and 62 percent, and no systematic relationship is displayed between strength and the percent of transfers earning degrees. Only in states identified as having a strong overall agreement does the percentage of transfer students earning a four-year degree drop substantially—which of course runs counter to the hypothesis that stronger agreements would facilitate greater success in transferring. However, when we look only at the articulation components, we do see that states with common general education requirements graduate 61 percent of transfer students, which is a significantly higher share than the 56 percent who graduate in states without this component. Importantly, states with common general education requirements (meaning that institutions participating in the transfer agreements all require the same number and sequence of courses by department as basic requirements) saw a higher share of transfer students completing their BA degree.¹

¹ The number of students in states with common course numbering is too small to be statistically reliable.

Falling back on community colleges

As explained earlier, students are increasingly falling back on community colleges after leaving four-year colleges without BA degrees, a pathway commonly referred to as *reverse transfer*. **Table 4** shows that about 9 percent of four-year students in our sample made a reverse transfer. Theoretically, the same articulation and transfer agreements that facilitate the two- to four-year pathway should also help students transferring from four- to two-year institutions. While we find that fewer students reverse transfer in states with formal agreements, more of the students who make a reverse transfer actually earn an associate's degree in states with formal agreements (22 percent vs. 16 percent). Again, it may be that formal agreements minimize the loss of credits in a transfer and increase the chance that a student's course taking stays on track through the process.

Transfer and articulation policies indicating strong post-secondary environment

The statistics described above indicate that transfer and articulation policies, particularly the articulation components, may be facilitating the movement of students through post-secondary institutions. However, these formal agreements may also be indicative of a more successful overall higher education policy. To see if this is the case, we looked at how the share of students that receive any degree (associate's, bachelor's, or certificate) relate to the strength of the state's agreement and the strength of the state's transfer components. **Table 5** shows that, overall, the percent of students earning a degree is slightly higher in states with a transfer agreement. States with agreements had 56 percent of their students earning at least one degree or certificate, while states without agreements saw only 51 percent of student reaching these goals. However, the share of students earning a degree or certificate does not increase with the strength of the agreement or strength of the articulation components.

Responding to the pathway's demand

Throughout the discussion above, we have assumed that states' transfer and articulation policies influence students' post-secondary attendance. However, it might be the case that it is student behavior driving state policy; thus these policies may very well be a response to high demand for such a pathway. To see if states could be responding to high numbers of students enrolling in the two-year system, **Table 6** compares the share of students enrolling in two-year colleges in states that implemented an articulation agreement between 1992 and 1999 and those that continued without an agreement in 1999. Here, we find that schools adopting a new agreement had a higher share of students enrolling in two-year colleges in 1992. These states also saw a higher share of students pursuing the pathway with transfers from two- to four-year schools. Taken together, these statistics suggest that states may well be responding to student's behavior in setting transfer and articulation policies.

Conclusions

The results above offer a somewhat mixed picture of the relationship between state transfer and articulation policy and student post-secondary enrollment. We do not consistently find that states with transfer and articulation policies or states with the strongest articulation policies necessarily have the highest share of community college students aspiring to someday earn a BA degree. However, we do find some association between stronger policies and higher aspirations and student transfers. In addition, we find that common general education requirements and common core courses are at times associated with higher numbers of transfers and eventual BA degrees earned.

This preliminary analysis also offers two interesting and unexpected insights. First, we see a positive relationship between the presence of transfer and articulation policies and the share

of enrolled students whose aspirations ‘warm up’ to include obtaining a BA degree. Community colleges have long been criticized for diverting students from their original aspirations, something popularly referred to as ‘cooling out.’ More recently, however, research has suggested that many students actually ‘warm up’ in their two-year programs based on the expectations and guidance they receive there (Bragg 1998; Grubb 1996). Interestingly, we find that strong transfer and articulation policies might also be a factor in getting students to ‘warm up’ to earning a BA degree.

Second, although we focus a great deal of attention on the hypothesis that transfer and articulation policies, particularly stronger policies, would be associated with greater aspiration toward and participation in the two- to four-year pathway, we also find some evidence suggesting that states may adopt these policies in response to high demand. Specifically, we find that states adopting the policy between 1992 and 1999 had a higher share of their students in two-years schools than did states not adopting these policies by 1999.

While an interesting start, this initial analysis does not delve into the complex relationships that impact post-secondary enrollment decisions and student success. In addition to states’ post-secondary policies such as transfer and articulation agreements, students weigh current labor market conditions, their own propensity for schooling, and their financial, personal, and family needs when making enrollment decisions. Moreover, factors such as a student’s educational background and course taking patterns play a significant role in determining whether students can transfer, and whether they will ultimately succeed in earning a degree after transferring. To understand the role of transfer and articulation policies in the post-secondary experiences of students, we must account for this much more complex array of individual and contextual factors. As we continue our analyses, we will follow individual students as they exit

their high school programs, enroll in courses and make transfer decisions. This next phase will account for the individual and contextual factors that shape students' post-secondary experiences and, hopefully, illuminate the relative role that state post-secondary transfer and articulation policies play in the college enrollment and graduation of students.

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Tables

Table 1: Summary of Transfer Agreements between 1992 and 1999 (n=43)

	1992	1994
States with legislated agreements	24	34
<i>Overall agreement strength</i>		
Weak (1)	20	9
Fairly weak (2)	1	1
Moderate (3)	13	16
Fairly strong (4)	5	12
Strong (5)	4	5
Average strength	2.35	3.07
<i>Articulation components</i>		
General education requirements	14	22
Common general education core	14	24
Requirements for program majors	4	7
Common course numbering	7	13
Average articulation components strength	2.14	2.86
Maintained agreement from 1992 to 1999		23
New agreement between 1992 and 1999		11
Legislated agreement in 1992		2
Never legislated statewide agreement		8
Retracted agreement		1

Table 2: Percentage of Students Picking the Two- to Four-Year Pathway[§]

	Baseline		1992 Agreement		Overall Agreement Strength 1992				
	N	Yes	No	weak/none	fairly weak	moderate	fairly strong	strong	
Attend two-year institution ("general use")	8462	38.40	39.70	39.83	12.81	39.67	41.83	27.44	
Expect BA, attend two-year ("springboard to BA degree")	5918	28.18	30.12	29.51	6.92	28.46	33.24	17.43	

Articulation Components 1992						
Gen. Ed Requirements	Common Gen Ed. Core		Program Major		Common Course Number	
	Yes	No	Yes	No	Yes	No
Attend two-year institution ("general use")	39.78	37.92	31.56	40.66	36.68	38.63
Expect BA, attend two-year ("springboard to BA degree")	29.37	27.78	21.21	30.57	29.04	28.07

Overall Articulation Component Strength 1992			
weak/none	fairly weak	moderate	strong
Attend two-year institution ("general use")	39.72	38.94	38.51
Expect BA, attend two-year ("springboard to BA degree")	29.46	27.91	26.25

[§]The sample has been weighted to be representative of U.S. high school graduates in 1992.

Table 3: Succeeding in the Two- to Four-Year Pathway^a

	Baseline		1992 Agreement				Overall Agreement Strength 1992			
	N	Yes	No	weak/none	fairly weak	moderate	fairly strong	strong		
Transfer from two- to four-year	3303	27.66	28.50	27.77	21.43	30.68	29.90	13.48		
Aspire BA and transfer	1698	39.48	40.76	40.48	25.82	43.28	35.74	21.01		
Not aspire BA and Transfer	1270	12.64	10.29	10.55	19.04	18.16	22.11	4.95		
Transfer and earn BA	866	57.17	56.74	56.24	51.57	62.78	58.82	32.67		

	Articulation Components 1992			
	Gen. Ed Requirements	Common Gen Ed. Core	Program Major	Common Course Number
	Yes	No	Yes	No
Transfer from two- to four-year	27.58	27.69	26.49	27.96
Aspire BA and transfer	36.73	40.47	35.85	40.34
Not aspire BA and Transfer	17.14	11.01	17.36	11.31
Transfer and earn BA	61.21	55.71	56.10	57.43

	Overall Articulation Component Strength 1992			
	weak/none	fairly weak	moderate	strong
Transfer from two- to four-year	28.07	20.35	32.00	29.97
Aspire BA and transfer	40.96	28.76	42.39	40.04
Not aspire BA and Transfer	10.63	15.97	19.25	33.56
Transfer and earn BA	55.47	57.93	66.88	53.91

^aThe sample has been weighted to be representative of U.S. high school graduates in 1992.

Table 4: Community College as a Useful Fallback (Four- to Two-year Pathway)^a

	Baseline		1992 Agreement		Overall Agreement Strength 1992			
	N	Yes	No	weak/none	fairly weak	moderate	fairly strong	strong
Four-year transfer to two-year institution	4188	8.86	10.36	10.47	7.04	5.23	8.50	6.51
Four- to two-year transfer, earn AA	332	17.76	15.49	15.52	29.02	23.95	19.77	23.90

	Articulation Components 1992							
	Gen. Ed Requirements		Common Gen Ed. Core		Program Major		Common Course Number	
	Yes	No	Yes	No	Yes	No	Yes	No
Four-year transfer to two-year institution	7.01	9.46	6.58	9.77	7.95	8.98	5.61	9.25
Four- to two-year transfer, earn AA	23.93	16.27	24.30	15.99	16.91	17.86	16.74	17.84

	Overall Articulation Component Strength 1992		
	weak/none	fairly weak	moderate
Four-year transfer to two-year institution	10.37	5.49	7.09
Four- to two-year transfer, earn AA	15.46	30.83	21.74

^aThe sample has been weighted to be representative of U.S. high school graduates in 1992.

Table 5: Articulation Policies as Reflective of a Successful Higher Education Policy^a

	Baseline		1992 Agreement		Overall Agreement Strength 1992				
	N	Yes	No	weak/none	fairly weak	moderate	fairly strong	strong	
AA degree received	8462	12.82	10.85	10.83	6.46	14.95	16.11	6.81	
BA degree received	8462	42.82	39.38	39.31	54.83	46.85	39.78	35.84	
Certificate received	8462	5.10	4.76	4.88	3.40	3.90	3.44	9.41	
BA or AA degree received	8462	51.29	46.71	46.75	58.63	56.25	49.70	41.41	
BA, AA, or certificate received	8462	56.03	50.98	51.09	62.03	59.71	53.09	50.57	

	Articulation Components 1992							
	Gen. Ed Requirements		Common Gen Ed. Core		Program Major		Common Course Number	
	Yes	No	Yes	No	Yes	No	Yes	No
AA degree received	13.32	11.05	11.15	11.80	11.69	11.63	13.24	11.43
BA degree received	40.22	40.95	44.46	39.53	37.36	41.23	38.18	41.09
Certificate received	5.37	4.73	5.51	4.70	6.94	4.62	5.63	4.80
BA or AA degree received	48.60	48.53	51.87	47.45	44.80	49.06	46.24	48.85
BA, AA, or certificate received	53.67	52.79	57.10	51.66	51.46	53.22	51.50	53.21

	Overall Articulation Component Strength 1992			
	weak/none	fairly weak	moderate	strong
AA degree received	10.81	13.27	14.06	10.77
BA degree received	39.24	47.28	47.38	37.27
Certificate received	4.84	4.33	3.51	7.22
BA or AA degree received	46.67	56.58	55.84	44.07
BA, AA, or certificate received	50.98	60.79	59.12	51.11

^aThe sample has been weighted to be representative of U.S. high school graduates in 1992.

Table 6: Legislate an Agreement Between 1992 and 1999^a

	New Agreement	
	Yes	No
<i>Picking the two- to four-year pathway</i>		
HS graduates attend two-year schools	41.97	37.33
Expect BA, attend two-year	33.38	26.81
<i>Succeeding in the two- to four-year Pathway</i>		
Transfer from two- to four-year	30.73	25.87
Aspire BA and transfer	42.28	38.84
Not aspire BA and Transfer	12.38	8.15
Transfer and earn BA	59.42	52.98
<i>Community College as a Useful Fallback</i>		
four-year transfer to two-year institution	10.25	10.47
four- to two-year transfer, earn AA	10.57	20.12
<i>Reflective of a Successful Higher Education Policy</i>		
AA degree received	11.18	10.50
BA degree received	40.76	37.93
Certificate received	5.04	4.47
BA or AA degree received	47.73	45.65
BA, AA, or certificate received	52.24	49.66

^aThe sample has been weighted to be representative of U.S. high school graduates in 1992.

Appendix A

Table A-1: Articulation Agreement by State in 1992

State	Yes	Strength	Transfer Component				Transfer Overall
			General Ed.	Ed. Core	Program Majors	Common Numbering	
Alabama	x	3	1	1	0	0	3
Alaska	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Arizona		1	0	0	0	0	1
Arkansas		1	0	0	0	0	1
California		1	0	0	0	0	1
Colorado	x	3	1	1	0	1	4
Connecticut		1	0	0	0	0	1
Delaware		1	0	0	0	0	1
Florida	x	4	1	0	1	1	5
Georgia	x	5	1	1	1	1	5
Hawaii	x	5	0	0	0	0	2
Idaho	x	4	1	1	0	1	4
Illinois		1	0	0	0	0	1
Indiana	x	2	0	1	0	0	2
Iowa	x	3	0	0	0	0	2
Kansas	x	3	1	1	0	0	3
Kentucky		1	0	0	0	0	1
Louisiana		1	0	0	0	0	1
Maine		1	0	0	0	0	1
Maryland		1	0	0	0	0	1
Massachusetts	x	3	0	1	0	0	3
Michigan		1	0	0	0	0	1
Minnesota	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Mississippi	x	3	0	0	1	0	3
Missouri	x	4	1	1	0	0	3
Montana	x	3	1	1	0	0	3
Nebraska	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Nevada	x	3	1	0	0	0	3
New Hampshire	N/R	N/R	N/R	N/R	N/R	N/R	N/R
New Jersey	N/R	N/R	N/R	N/R	N/R	N/R	N/R
New Mexico		1	0	0	0	0	1
New York		1	0	0	0	0	1
North Carolina	N/R	N/R	N/R	N/R	N/R	N/R	N/R
North Dakota	x	5	1	1	0	1	4
Ohio	x	5	1	1	1	0	5
Oklahoma		1	0	0	0	0	1
Oregon	x	3	1	0	0	0	3
Pennsylvania		1	0	0	0	0	1
Rhode Island	x	3	0	0	0	0	1
South Carolina		1	0	0	0	0	1
South Dakota		1	0	0	0	0	1
Tennessee		1	0	0	0	0	1
Texas		1	0	0	0	0	1
Utah	x	4	1	1	0	1	4
Vermont	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Virginia	x	3	0	0	0	0	2
Washington	x	3	1	1	0	0	3
West Virginia	x	4	0	1	0	0	3
Wisconsin	x	1	0	0	0	0	1
Wyoming	x	3	0	0	0	1	2
Total	24		14	14	4	7	

Table A-2: Articulation Agreement by State in 1999

State	Yes	Strength	Transfer Component				Transfer Overall
			General Ed.	Ed. Core	Program Majors	Common Numbering	
Alabama	x	3	1	1	0	0	3
Alaska	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Arizona	x	4	1	1	1	0	5
Arkansas	x	3	1	1	0	0	3
California	x	5	1	1	0	1	4
Colorado	x	3	1	1	0	1	4
Connecticut	x	4	1	1	0	0	3
Delaware		1	0	0	0	0	1
Florida	x	4	1	0	1	1	5
Georgia	x	5	1	1	1	1	5
Hawaii	x	3	0	0	0	0	2
Idaho	x	4	1	1	0	1	4
Illinois	x	5	0	1	1	1	5
Indiana	x	2	0	1	0	0	2
Iowa	x	3	0	0	0	0	2
Kansas	x	3	1	1	0	0	3
Kentucky	x	4	0	1	0	1	4
Louisiana	x	4	1	1	0	1	4
Maine		1	0	0	0	0	1
Maryland	x	4	1	1	1	0	4
Massachusetts	x	3	0	1	0	0	3
Michigan		1	0	0	0	0	1
Minnesota	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Mississippi	x	3	0	0	1	0	3
Missouri	x	4	1	1	0	0	3
Montana	x	3	1	1	0	0	3
Nebraska	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Nevada	x	3	1	0	0	0	3
New Hampshire	N/R	N/R	N/R	N/R	N/R	N/R	N/R
New Jersey	N/R	N/R	N/R	N/R	N/R	N/R	N/R
New Mexico	x	4	0	1	0	0	3
New York		1	0	0	0	0	1
North Carolina	N/R	N/R	N/R	N/R	N/R	N/R	N/R
North Dakota	x	5	1	1	0	1	4
Ohio	x	5	1	1	1	0	5
Oklahoma	x	4	1	1	0	1	4
Oregon	x	3	1	0	0	0	3
Pennsylvania		1	0	0	0	0	1
Rhode Island	x	3	0	0	0	0	1
South Carolina		1	0	0	0	0	1
South Dakota	x	3	1	0	0	1	3
Tennessee		1	0	0	0	0	1
Texas		1	0	0	0	0	1
Utah	x	4	1	1	0	1	4
Vermont	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Virginia	x	3	0	0	0	0	2
Washington	x	3	1	1	0	0	3
West Virginia	x	4	0	1	0	0	3
Wisconsin		1	0	0	0	0	1
Wyoming	x	3	0	0	0	1	2
Total	34		22	24	7	13	