

Humanities and Liberal Arts Education at Community College

How It Affects Transfer and Four-Year College Outcomes

By Theo Pippins and Clive R. Belfield

About one fifth of all community college courses taken by students are in humanities and liberal arts fields (Pippins, Belfield, & Bailey, 2019).¹ The goal of many of the students taking these courses is to attend a four-year college and complete a bachelor's degree. However, too few meet this goal. One reason is the weak transfer process between two-year and four-year colleges (Attewell & Monaghan, 2016). When transferring to a four-year college, community college students typically find that some of their completed community college coursework is not accepted by the four-year college for credit toward a given major and that some coursework is not accepted even for elective credit. These students thus accumulate redundant credits and must stay longer in college. This is a serious issue, yet a broader concern about the transfer process is whether students who want to transfer are adequately prepared for four-year college coursework. If students have not learned suitable material and/or are not performing at an appropriate level in community college, then these students will almost certainly struggle at a four-year college.



A broad concern about the transfer process is whether students who want to transfer are adequately prepared for four-year college coursework.

The link between coursework at community colleges and four-year colleges may be especially important for students who complete coursework in the humanities and liberal arts (HLA) before transferring. Degree programs in HLA at community colleges do not match well with those at four-year colleges. Whereas most associate degree programs include a significant HLA component (including general studies), fewer than 10 percent of bachelor's degree programs do. Also, whereas fewer than 10 percent of HLA associate degrees awarded are in the visual and performing arts, more than 35 percent of HLA bachelor's degrees awarded are in this particular field. Students with associate degrees in HLA may therefore not face a straightforward program choice if they transfer to a four-year college. In addition, community college course requirements may not adequately guide students in ways that prepare them for four-year college. HLA course requirements are at best a "patchwork," and this patchwork becomes even more confusing and complex when students transfer across colleges (Pippins et al., 2019). Thus, community college students may not have a

clear understanding of what HLA coursework they should complete before they transfer and how that prior coursework relates to their subsequent pathway at a four-year college.

To date, there has been little empirical investigation of how coursework aligns across college sectors. Specifically, there is no direct evidence on how HLA course-taking and performance at community college influences student transfer to a four-year college, completion of four-year college coursework, grades earned in that coursework, and completion of a bachelor's degree.

In this report, we directly examine how preparation at community college affects transfer and outcomes at four-year colleges. We analyze three datasets with detailed information on student transcripts, including courses completed and grades earned at community colleges and public four-year colleges. We begin by reviewing the possible mechanisms through which HLA coursework at community college might influence four-year outcomes. Next, we show patterns of course-taking in HLA and other subjects at both two- and four-year public colleges. Then we estimate relationships between community college course-taking and performance and four-year college outcomes. We find evidence of a strong link between HLA coursework at community college and HLA coursework at four-year college, especially when we look at grades that students earn. Moreover, HLA courses completed at community college appear to be at least as influential as, and in some cases more influential than, non-HLA courses on student outcomes. These findings are informative for stakeholders in both community colleges and four-year colleges.

Key Findings

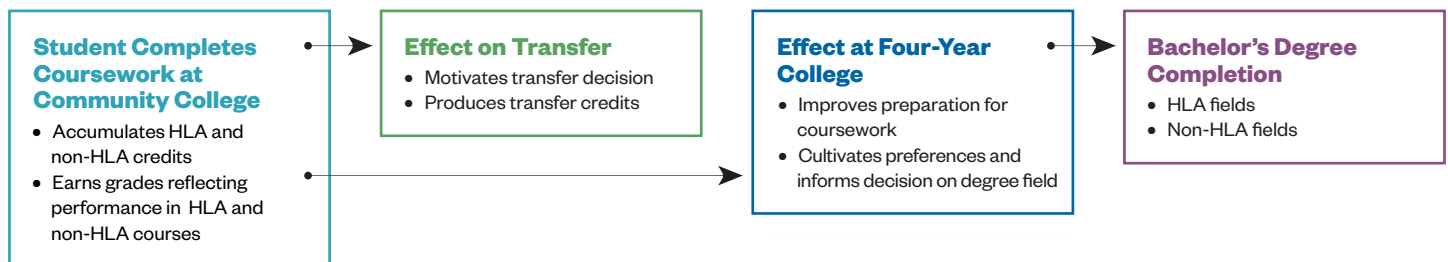
- Transfer students typically complete only a few courses in humanities and liberal arts at community college before they transfer to a four-year college.
- Grades in HLA community college courses are a strong predictor of whether students transfer to a four-year college.
- Grades in HLA community college courses are a strong predictor of how well transfer students perform in HLA courses at a four-year college.
- Grades in HLA community college courses are a strong predictor of how likely transfer students are to complete a bachelor's degree.
- The number of community college credits accumulated by students predicts four-year college transfer rates and outcomes, but the associations are weaker than for grades.
- Community college course-taking and performance in HLA fields predicts transfer and four-year outcomes just as strongly as that in non-HLA fields. There is certainly no evidence that grades or number of credits earned in non-HLA community college courses are more predictive of outcomes at four-year colleges. HLA and non-HLA grades are equally valid predictors.

The Influence of HLA Coursework on Transfer and Completion

HLA programs and coursework are a substantial proportion of U.S. postsecondary education. Over 40 percent of associate degrees and over 10 percent of bachelor's degrees are in HLA majors (including in general studies). More than one quarter of every undergraduate degree is composed of coursework in HLA subjects. However, HLA coursework is a patchwork, in part because of the complicated requirements imposed by departments, colleges, and college systems. On average, community college students accumulate only five credits (two courses) in HLA during their entire time in community college. Those who transfer accumulate more: They obtain 10 credits, on average, at community college and then eight more credits at their four-year college. These HLA credits are in a mix of fields, with English and visual and performing arts being the most common HLA courses taken (Pippins et al., 2019).

The influence of this HLA coursework on transfer and four-year college student outcomes can be modelled using a simple pathway framework (see Adelman, 2004; Bailey, Jaggars, & Jenkins, 2015).² A student pathway is shown in Figure 1. Starting in community college, students accumulate credits in particular subjects and with an associated performance (measured, e.g., as a grade that can be averaged with others into a GPA). Students then decide whether to transfer and how many credits to earn at a four-year college. Enrollment, coursework, and performance at the four-year college are therefore contingent on coursework and performance at the community college. We anticipate that students who perform better in their HLA coursework at community college will be more likely to transfer and perform better when they enroll at the four-year college.

Figure 1.
Community College Student Pathway to Four-Year College Completion



There is little direct evidence on how HLA coursework at community college affects transfer. Most of the literature focuses on patterns for STEM students, even as most studies indicate that transfer rates vary significantly by field of study (Wang, 2012; LaSota & Zumeta, 2016). Typically, academic programs have higher rates of transfer than vocational programs (but see Jenkins & Fink, 2016), though the definition of academic programs is generally broad, including social sciences and some STEM programs. Other studies consider gatekeeper courses. Analyzing data from Kentucky community colleges, for example, Davidson (2015) finds that passing college-level English is positively correlated with associate degree completion and four-year

transfer. (Qualitative studies of community college students' literacy skills also suggest that these skills help students transfer [Perin, 2013]).

Similarly, there is only limited relevant literature on the relationship between HLA coursework at community college and four-year degree completion. A considerable body of literature exists on what general individual and institutional characteristics influence completion (Bowen, Chingos, & McPherson, 2009; Strother, Van Campen, & Grunow, 2013). Most of this literature looks at average completion probabilities, finding that transfer students graduate at similar rates as rising juniors at four-year colleges (Xu, Jaggars, & Fletcher, 2016; Wang, 2009; Roksa & Calcagno, 2010). Of the studies that do consider the effects of particular kinds of coursework on bachelor's degree outcomes for transfer students, they are almost exclusively focused on STEM coursework or on gatekeeper/remedial courses.³ Overall, the available evidence is only indirectly relevant to understanding how HLA course-taking at community college influences four-year outcomes.

Students who perform better in community college should perform better in four-year college, whatever subjects they study. However, HLA credits may be more influential than credits in other subjects. First, HLA credits may convey more general skills to complement credits in other fields. Strong writing skills, for example, should lead to improved performance in all courses that have a substantial writing component. Second, HLA courses may be more enjoyable and may cultivate students' preferences for college. Learning art history, for example, may give students a "desire to learn" and make them more enthusiastic about particular future courses. Finally, HLA courses at community college may be more instrumentally useful. HLA coursework, for example, may be more likely to be accepted as transfer credit at four-year colleges, or HLA courses may be offered more frequently, allowing students to enroll more intensively per semester. Students who are able to more readily accumulate credits should progress further (Jenkins, 2011). Broadly, students who take HLA courses at community college may be—via these general skills, motivational, and instrumental mechanisms—more likely to transfer and succeed at four-year college.

In this study we investigate whether HLA course-taking and performance at community college is associated with improved transfer and four-year college outcomes both in absolute terms and relative to coursework in other fields. (We are not able to test for the importance of general skills, motivation, or instrumentality directly.) Our hypotheses are that: (1) community college students who take more HLA courses—and those who do better in HLA courses—are more likely to transfer and complete a four-year degree; (2) HLA performance at community college is strongly predictive of HLA performance at the four-year college; and (3) HLA courses are at least as effective as other courses in helping students perform well after transfer.



In this study we investigate whether HLA course-taking and performance at community college is associated with improved transfer and four-year college outcomes both in absolute terms and relative to coursework in other fields.

Data

We use three datasets for our empirical analysis. Two datasets include information on students' course-taking and grades across their enrollment in community college and public four-year college; the third dataset includes community college transcripts but only attendance and degree completion information at the public four-year college.

The first dataset includes transcripts from all students attending community colleges within a state system, as well as those students' transcripts if they enroll at a public four-year college within the same state. This state community college system (labelled X) has over 20 colleges and enrolls over 100,000 students across all programs annually. We use data on 24,000 community college students who first enrolled at any of the state's community colleges in 2012 and had transcript data up to 2017. This large dataset allows us to perform in-depth subgroup analysis. However, the dataset includes information on only 4,000 students who transferred to public four-year colleges within the state.

The second dataset is also from a statewide college system, with transcript data on all students at the community college but with only attendance and graduation data at public four-year colleges. This state system (labelled Y) has over 30 colleges and enrolls over 150,000 students annually. We use data on over 20,000 community college students (including 10,000 transfer students) who first enrolled in 2012 with follow-up data to 2017. In this state, we only have data on whether or not each student transferred and whether he or she obtained a four-year degree or not. Also, we restrict the analysis to only academic students.

The third dataset is the Education Longitudinal Study of 2002 (ELS). The ELS is a nationally representative survey of 16,700 students who were in 10th grade in 2002. These students were followed up with additional survey waves; the most recent follow-up was in 2012, by which time almost all had terminated their postsecondary education (through four-year degree completion). The ELS includes detailed information on all courses taken at all colleges each student attended. It also includes information on students' high school performance in math and reading. However, the sample of community college starters is small (fewer than 2,500), and data on transcripts is less precise; thus, subgroup analysis is limited. Also, for comparability purposes, we restrict our analysis to students who transfer to public four-year colleges (and we do not match students by state).

These datasets allow us to estimate in detail the relationship between community college course-taking and performance and four-year college outcomes.

Patterns of HLA Course-Taking and Performance

Table 1 shows community college course-taking and performance of transfer students in comparison to non-transfer students over their entire time in community college. (This student time-in-college depiction is different from an annual snapshot of course provision because students vary in their duration of college attendance.) Students who transfer accumulate on average 6–13 credits in HLA prior to transfer, as well as 10–33 credits in non-HLA subjects. However, 6–15 percent of students who transfer do so with no HLA coursework at all; these students may therefore be unprepared for HLA coursework at the four-year college. Across all credit measures, transfer students have higher credit accumulations than students who do not transfer. Notably, transfer students have much higher GPAs than non-transfer students; they also have slightly higher GPAs in their HLA than in their non-HLA courses.

Table 1.

Total Two-Year Credits Accumulated and GPAs of Community College Students

| | ELS Data | | State X | | State Y | |
|----------------------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|
| | Non-transfer students | Transfer students | Non-transfer students | Transfer students | Non-transfer students | Transfer students |
| Credits in HLA courses | 8 | 13 | 4 | 10 | 4 | 6 |
| Credits in non-HLA courses | 27 | 28 | 19 | 33 | 8 | 10 |
| Earned no HLA credits | 32% | 15% | 45% | 13% | 10% | 6% |
| Earned no non-HLA credits | 13% | 7% | 24% | 6% | 3% | 1% |
| GPA in HLA courses | 1.76 | 2.71 | 2.11 | 2.92 | 2.78 | 3.31 |
| GPA in non-HLA courses | 1.82 | 2.67 | 2.24 | 2.65 | 2.78 | 3.17 |

Source: Statewide community college systems X and Y, transcript data, 2012 starting cohort. ELS transcript data.

Table 2 shows four-year college course-taking and performance of transfer students in comparison to four-year starters. There is substantial variation in the datasets as to how much HLA coursework transfer students complete: The range is from 6–18 credits. Interestingly, when community college and four-year courses of transfer students are aggregated, students who transfer complete similar numbers of HLA and non-HLA courses as students who start in four-year colleges. Transfer students earn 41–43 two-year credits and 43–75 four-year credits; by comparison, four-year starters earn 85–95 credits. Again, however, a substantial minority of transfer students complete no HLA courses, in this case at the four-year college. Finally, the evidence on GPAs is mixed. The four-year college data from state X shows lower grades for transfer students and for HLA coursework; the ELS transcripts show almost identical grades for transfer and native students across HLA and non-HLA coursework.

Table 2.
Total Four-Year Credits Accumulated and GPAs of Four-Year College Students

| | ELS Data | | State X | |
|----------------------------|-----------------|-------------------|-----------------|-------------------|
| | Native students | Transfer students | Native students | Transfer students |
| Credits in HLA courses | 27 | 18 | 15 | 6 |
| Credits in non-HLA courses | 68 | 57 | 70 | 37 |
| Earned no HLA credits | 7% | 14% | 12% | 36% |
| Earned no non-HLA credits | 4% | 4% | 7% | 8% |
| GPA in HLA courses | 2.55 | 2.56 | 2.91 | 2.63 |
| GPA in non-HLA courses | 2.38 | 2.46 | 3.23 | 2.69 |

Sources: Statewide community college system X, transcript data; 2012 starting cohort. ELS transcript data. Data on four-year credits and GPAs for system Y are unavailable.

Tables 1 and 2 yield several conclusions about HLA coursework (see also Pippins et al., 2019). First, in aggregate approximately one fourth of all community college courses and four-year courses completed by students are in HLA. However, less than half of all HLA courses at community college are taken by students who transfer to a four-year college. (Most HLA credits at community college are accumulated by students who never transfer.) An even smaller proportion (fewer than 10 percent) of HLA courses taken at the four-year level are taken by transfer students. (Again, this is because most HLA credits are taken by native students.) Therefore, to improve cohesion between HLA at community college and HLA at four-year college, reforms and policies need to accurately target students who are actually going to transfer and then take HLA courses.

Second, there is no clear evidence that students are “loading up” on HLA credits prior to enrolling at a four-year college, i.e., taking a lot of HLA community college courses that move them quickly toward degree completion. On average, transfer students take half of their HLA courses prior to enrolling at the four-year college and half when at the four-year college. Indeed, a non-trivial number of students take no HLA courses before transferring. Importantly, there is no clear imbalance between HLA and non-HLA courses: The ratios of coursework are roughly the same across sectors. That is, students who transfer have similar proportions of HLA to non-HLA coursework at community college as they have at four-year college.

Third, there is a significant GPA gap in favor of community college students who transfer. In both HLA and non-HLA coursework, transfer students perform about one-half to one letter grade higher than non-transfer students. As well, transfer students almost maintain their GPAs (from community college) during their tenure at four-year college.

Transfer and bachelor’s degree completion outcomes are given in Table 3. The three datasets show differing transfer rates (primarily because of the samples of students in each dataset). Between 16 and 41 percent of students transfer. Only a very small fraction of community college students ultimately complete their intended goal: 6–21

percent of all community college students complete a bachelor's degree. This low rate is a combination of low transfer rates and average success rates: When students do transfer, their completion rate is reasonably high, at 36–64 percent.

Table 3.
Transfer and Bachelor's Degree Completion Rates

| | ELS Data | State X | State Y |
|--|----------|---------|---------|
| Transfer rate among community college students | 33% | 16% | 41% |
| Bachelor's degree completion rate among: | | | |
| All community college students | 21% | 6% | 21% |
| Community college students who transfer | 64% | 36% | 51% |

Sources: Statewide community college systems X and Y, transcript data, 2012 starting cohort. ELS transcript data.

How HLA Coursework Affects College Performance

Our main empirical test is on the relationship between community college coursework and outcomes at four-year colleges. We perform multivariate logistic/OLS regression on the effect of community college coursework grades on: transfer, GPA at the four-year college, and bachelor's degree completion. Alongside this, we examine how credit accumulation at community college is associated with four-year college outcomes. For coursework grades we separate out HLA and non-HLA subjects. We control for student-level and college-level characteristics where available.

By hypothesis, we expect HLA and non-HLA grades to be positively associated with four-year outcomes. Higher grades and more coursework in any subject at community college should improve outcomes at the four-year college. As well as testing for associations across sectors, we are also interested in the apparent effect of HLA coursework relative to non-HLA coursework.

Community College GPA and Four-Year College Outcomes

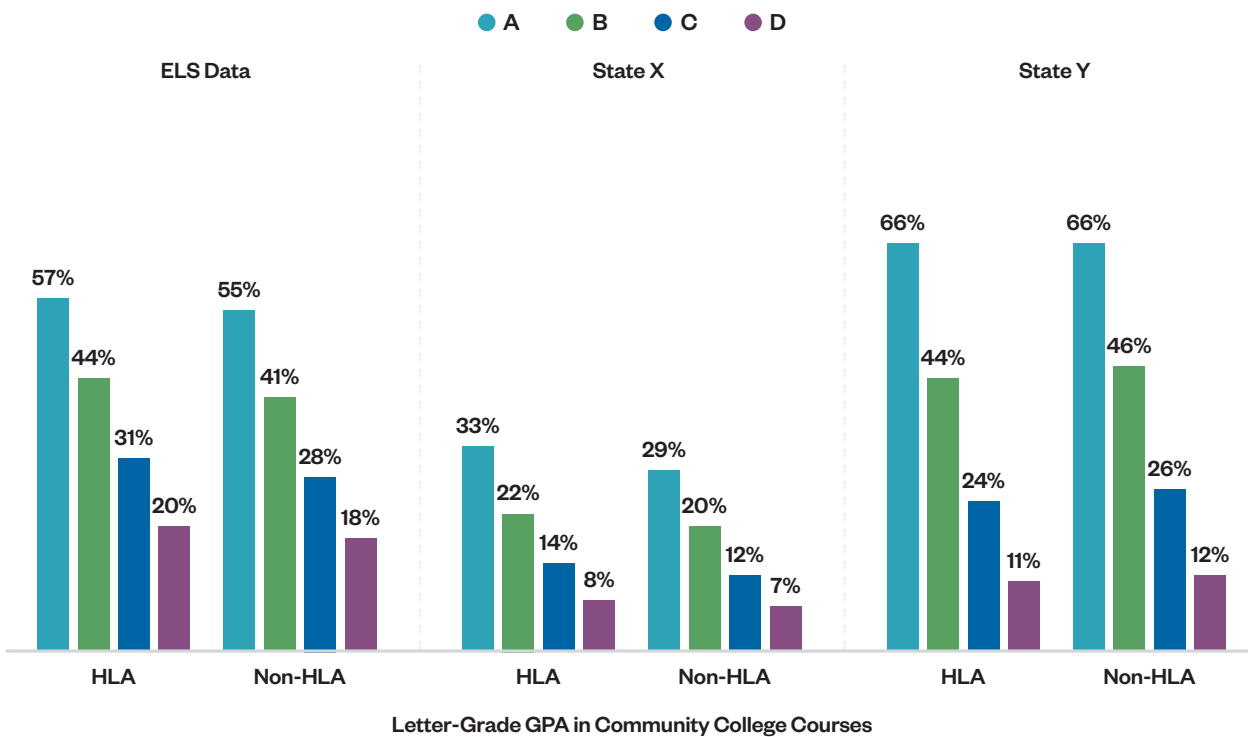
Our results are summarized in Figures 2–4. The left panel in each figure is based on the ELS transcript data; the center and right panels in Figures 2 and 4 and the right panel in Figure 3 are based on state-level data.⁴ The figures show the predicted outcomes of community college students based on their letter-grade GPA in community college.

Figure 2 shows a substantial and robust association between GPA in HLA coursework at community college and the probability of transfer. The gradients are very similar across all three datasets. The rates of transfer are different—as noted above—but the differences by letter-grade GPA show a consistent pattern. Broadly, for each letter grade decrement in HLA coursework, the probability of transfer goes down by one third. So, based on the ELS data, grade A (4.0) students transfer at a rate of 57 percent, grade B

(3.0) students at a rate of 44 percent, grade C (2.0) students at a rate of 31 percent, and grade D (1.0) students at a rate of 20 percent. The state-level datasets exhibit the same gradient. Therefore, controlling for student characteristics, HLA grades at community college are a strong indicator of transfer.

Figure 2.

Transfer Rate by Letter-Grade GPA in HLA and Non-HLA Community College Courses



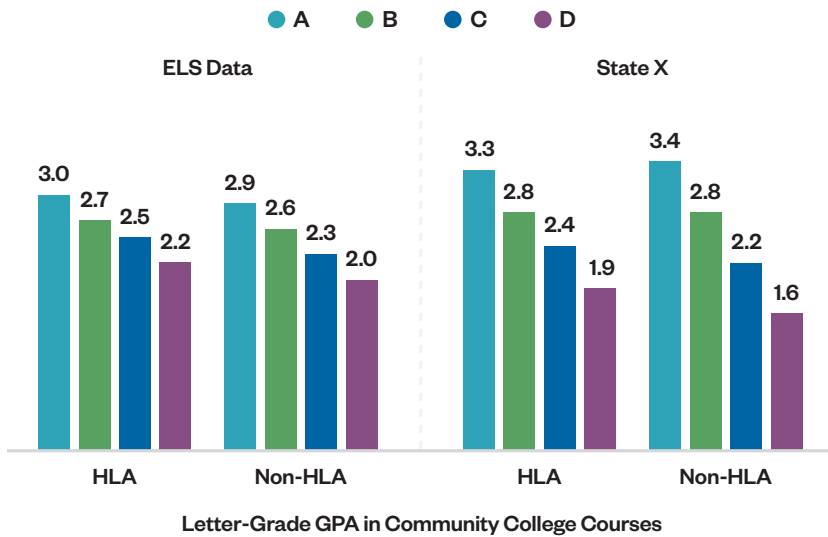
Also, Figure 2 shows a strong association between non-HLA course grades and transfer. Students with grade A GPAs in non-HLA courses at community college are much more likely to transfer than students with grade B, C, and D GPAs, respectively. This pattern is the same for HLA courses, although (based on the coefficients from the estimations) GPA in HLA coursework has slightly more predictive power than GPA in non-HLA coursework. There is certainly no evidence that grades in non-HLA coursework are better predictors of transfer than grades in HLA coursework.

Figure 3 shows, among students who transfer, a strong and consistent association between GPA in HLA and non-HLA coursework at community college and GPA in HLA and non-HLA coursework at four-year college (four-year grades are not available for state Y). The left-hand-side bars show the relationship between GPA in HLA coursework at community college and at four-year college; the right-hand-side bars show the relationship between GPA in non-HLA coursework across sectors. Conditional on transfer, students with grade A GPAs in HLA coursework at community college are predicted to have GPAs of 3.0+ (grade B or B+) in HLA coursework at the four-year college. By contrast, students with grade D GPAs in HLA coursework at community college are predicted to have GPAs of 2.0 (grade C) in HLA

coursework at four-year colleges. Overall, there is a clear and strong incremental effect: Higher grades in HLA coursework at community college predict higher grades in HLA coursework at four-year college. Similarly, Figure 3 also shows an almost identical relationship between community college and four-year college GPAs in non-HLA coursework. Again, there is no clear evidence that GPA in HLA coursework is a worse predictor than GPA in non-HLA coursework.⁵

Figure 3.

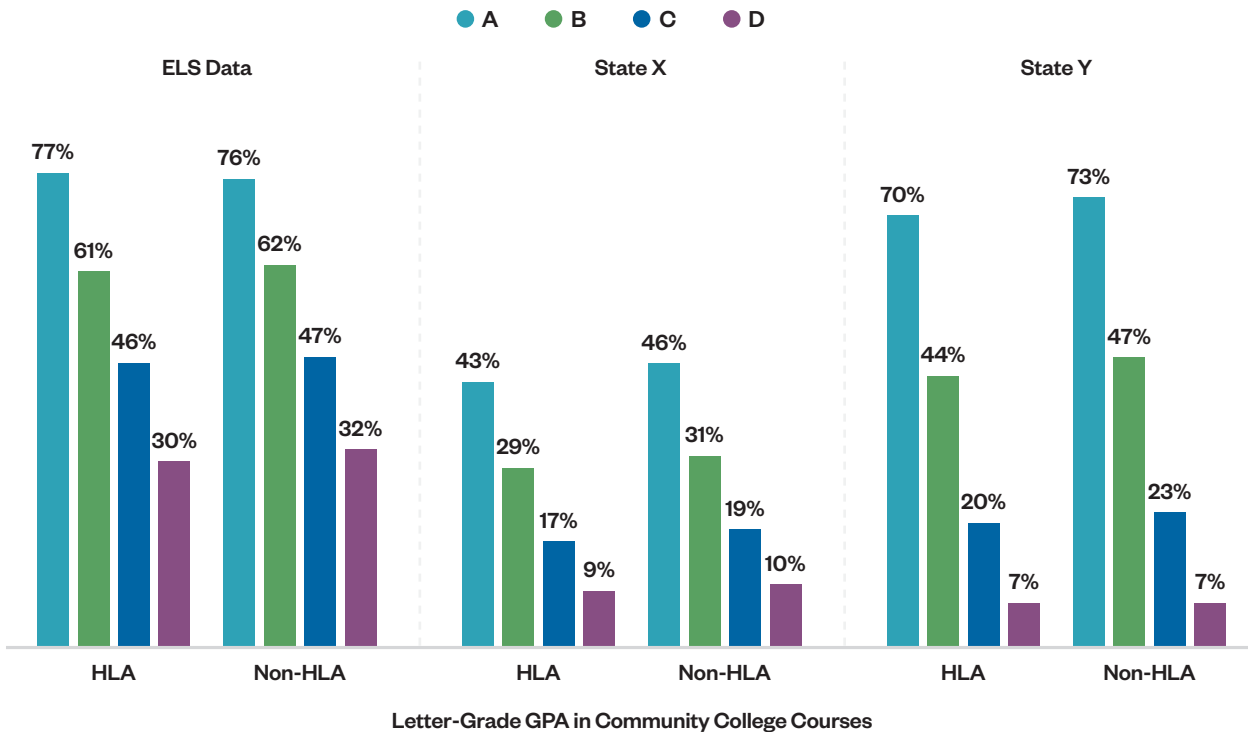
Numerical GPA in Four-Year College HLA and Non-HLA Courses by Letter-Grade GPA in Corresponding Field Community College Courses (Among Transfer Students)



Finally, Figure 4 shows, again among students who transfer, how GPA in HLA coursework at community college robustly predicts bachelor’s degree completion. For each dataset, higher grades in HLA coursework at community college predict progressively higher bachelor’s degree completion rates. The effect is substantively very large. Students with grade D GPAs in HLA coursework in community college have degree completion probabilities that are approximately one third of those students with grade A GPAs. Hence community college GPA in HLA coursework is a very strong predictor of bachelor’s degree completion. These relationships are almost equivalent to those between GPA in non-HLA community college coursework and bachelor’s degree completion.⁶ Community college GPA is thus a durable, substantial, and robust predictor of four-year award completion.

Figure 4.

Bachelor's Degree Completion Rate by Letter-Grade GPA in HLA and Non-HLA Community College Courses (Among Transfer Students)



As corroboration, we review the academic profiles of community college students who earn a bachelor's degree. These students' coursework can be compared to transfer students who do not complete a degree. We find that transfer students who complete a bachelor's degree take courses that are similar to those of transfer students who do not complete a degree. The striking difference is in their respective GPAs. When in community college, successful transfer students have GPAs that are high (averaging around grade B), and they (almost) maintain their GPAs as they progress through four-year college. By contrast, non-completers post slightly lower GPAs in community college but then experience a significant fall in their GPAs in their four-year college coursework.

Community College Credits Earned and Four-Year College Outcomes

We perform a similar analysis linking HLA credit accumulation in community college to performance at four-year college. Students with more HLA coursework should be better prepared for HLA coursework at four-year college; they may also be relatively better prepared than students with extensive non-HLA coursework. Of course, the number of credits a student earns at community college affects the number and types of credits he or she must earn to complete a four-year degree.⁷ Hence, we cannot definitively identify the effect of HLA credits on four-year performance.

Broadly, the results for credit accumulation correspond to those for GPAs: More HLA credits earned at community college lead to improved four-year college outcomes.⁸

First, students with more credits are more likely to transfer, and the relationship is stronger for students with more HLA credits than for students with more non-HLA credits. Second, a higher number of community college credits earned is predictive of a higher four-year college GPA, but the association is weak (and inconsistent across the datasets). This weaker result implies that how well students do in their HLA community college coursework is more important than how much coursework they have taken at community college. Finally, the number of community college credits earned is positively associated with bachelor's degree completion, and again the relationship is stronger for students with more HLA credits than for those with more non-HLA credits. This strengthens our general finding that HLA coursework is at least as good as, and possibly better than, non-HLA coursework in predicting four-year college outcomes.



More HLA credits earned at community college lead to improved four-year college outcomes.

Finally, we examine how well community college students perform at four-year college even if they have no prior HLA coursework. As noted above, a non-trivial fraction of community college students earn no HLA credits before they transfer. Four-year colleges may be especially concerned about these enrollees; they may be very unprepared for HLA courses.

Using the same estimation approach as above, we identify outcomes associated with completing no prior HLA courses at community college. Unsurprisingly, students with no credits in HLA are much less likely to transfer to a four-year college, and they have lower GPAs if they do attend. They are also modestly less likely to complete a bachelor's degree: The degree completion rate for students who transfer with no HLA credits is 52 percent; it is 58 percent for students who transfer with some HLA coursework. To be successful at four-year college, students should ideally have already accumulated at least some credits in HLA coursework at their community college.

Conclusion

Our empirical investigation into the influence of HLA coursework at community college yields several findings. Per community college transfer student, four-year colleges have only a few HLA courses with which to predict future performance. Community college students' lack of completed HLA courses may be by design—students might be eager to take courses at the four-year college—or it may be inadvertent, as course requirements imposed by colleges might be complex or confusing. Yet, this evidence of limited prior HLA coursework undermines the proposition that students are “loading up” on HLA courses prior to transfer. Nevertheless, students may not be well-prepared for baccalaureate programs, and colleges may consider that they have limited information on which to advise transfer students. Also, the small number of HLA courses typically taken by transfer students at community college makes it difficult to specify classroom interventions to improve links between community colleges and four-year colleges.

We find that community college students' GPAs in HLA coursework are strong indicators of transfer and four-year college performance. Students who perform well in HLA coursework at community college are more likely to transfer, to perform well in HLA coursework at four-year college, and to complete their degree. While transfer students' grades are lower at four-year college than at community college, the decrement is only modest and is found for grades across both HLA and non-HLA courses. GPAs are stronger predictors than credits earned (and in fact the validity of the HLA GPA is strengthened in light of the small number of courses on which this GPA is calculated). Community college grading practices in HLA coursework appear to be valid for four-year courses.

Finally, our comparisons between the predictive power of performance in HLA and non-HLA coursework at community college show no clear distinction. Higher performance in coursework in each subject area is strongly related to successful outcomes. Certainly, there is no evidence that students' performance in HLA coursework at community college is a relatively weaker indicator of their performance at four-year college. How well students perform in lower-level HLA courses strongly predicts how well they will perform in upper-level HLA courses, just as it does for non-HLA coursework.

In summary, these findings suggest no obvious deficiency in HLA at community colleges and four-year colleges. Yet it is also the case that most students do not enroll in many HLA courses at community college. The reasons for these student enrollment patterns are unclear. Further inquiry into students' enrollment choices should help to identify ways to improve educational cohesion across college sectors.



Students who perform well in HLA coursework at community college are more likely to transfer, to perform well in HLA coursework at four-year college, and to complete their degree.

Endnotes

1. About two fifths of all associate degrees earned by students are in humanities and liberal arts (Pippins et al., 2019).
2. For patterns of HLA coursework and outcomes at community college, see Zeidenberg, Jenkins, and Scott (2012).
3. A recent study by Carrell and Kurlaender (2016) examines both transfer rates and bachelor's degree completion rates for community college students across California. However, although suggestive that students from academic colleges are more successful than those from vocational colleges, the analysis is aggregated to the college level and does not have detailed information on student coursework.
4. Full details on the estimation procedure, including covariates and sample size, as well as coefficients from the estimates are available from the authors.
5. This conclusion also holds if the outcome is overall GPA at four-year college (coefficients not reported).
6. These findings are consistent if the sample is restricted to students who completed a bachelor's degree in an HLA major (coefficients not reported).
7. For example, a student with 60 transfer credits may only have upper-level (more difficult) or required courses to take at the four-year college; a student who transfers with 20 credits will have more lower-level courses, including electives, to take.
8. The correlations between HLA credits and transfer, GPA, and bachelor's degree are available from the authors.

References

- Adelman, C. (2004). *Principal indicators of student academic histories in postsecondary education, 1972–2000*. Washington, DC: U.S. Department of Education, Institute of Education Sciences. Retrieved from <https://www2.ed.gov/rschstat/research/pubs/prinindicat/prinindicat.pdf>
- Attewell, P., & Monaghan, D. (2016). How many credits should an undergraduate take? *Research in Higher Education*, 57(6), 682–713.
- Bailey, T., Jaggars, S. S., & Jenkins, D. (2015). *Redesigning America's community colleges: A clearer path to student success*. Cambridge, MA: Harvard University Press.
- Bowen, W. G., Chingos, M. M., & McPherson, M. S. (2009). *Crossing the finish line: Completing college at America's public universities*. Princeton, NJ: Princeton University Press.
- Carrell, S. E., & Kurlaender, M. (2016). *Estimating the productivity of community colleges in paving the road to success* (NBER Working Paper No. 22904). Cambridge, MA: National Bureau of Economic Research. Retrieved from <https://www.nber.org/papers/w22904.pdf>
- Davidson, J. C. (2015). Precollege factors and leading indicators: Increasing transfer and degree completion in a community and technical college system. *Community College Journal of Research and Practice*, 39(11), 1007–1021.
- Jenkins, D. (2011). *Get with the program: Accelerating community college students' entry into and completion of programs of study* (CCRC Working Paper No. 32). New York, NY: Columbia University, Teachers College, Community College Research Center
- Jenkins, D., & Fink, J. (2016). *Tracking transfer: New measures of institutional and state effectiveness in helping community college students attain bachelor's degrees*. New York, NY: Columbia University, Teachers College, Community College Research Center. Retrieved from <https://ccrc.tc.columbia.edu/media/k2/attachments/tracking-transfer-institutional-state-effectiveness.pdf>
- LaSota, R. R., & Zumeta, W. (2016). What matters in increasing community college students' upward transfer to the baccalaureate degree: Findings from the Beginning Postsecondary Study 2003–09. *Research in Higher Education*, 57(2), 152–189.
- Perin, D. (2013). Literacy skills among academically underprepared students. *Community College Review*, 41(2), 118–136.
- Pippins, T., Belfield, C. R., & Bailey, T. (2019). *Humanities and liberal arts education across America's colleges: How much is there?* New York, NY: Columbia University, Teachers College, Community College Research Center.
- Roksa, J., & Calcagno, J. C. (2010). Catching up in community colleges: Academic preparation and transfer to four-year institutions. *Teachers College Record*, 112(1), 260–288.

Strother, S., Van Campen, J., & Grunow, A. (2013). *Community college pathways: 2011–2012 descriptive report*. Stanford, CA: Carnegie Foundation for the Advancement of Teaching. Retrieved from https://www.carnegiefoundation.org/wp-content/uploads/2014/09/CCP_Descriptive_Report_Year_1.pdf

Wang, X. (2009). Baccalaureate attainment and college persistence of community college transfer students at four-year institutions. *Research in Higher Education*, 50(6), 570–588.

Wang, X. (2012). Factors contributing to the upward transfer of baccalaureate aspirants beginning at community colleges. *Journal of Higher Education*, 83(6), 851–875.

Xu, D., Jaggars, S. S., & Fletcher, J. (2016). *How and why does two-year college entry influence baccalaureate aspirants' academic and labor market outcomes?* (CAPSEE Working Paper). New York, NY: Center for Analysis of Postsecondary Education and Employment.

Zeidenberg, M., Jenkins, D., & Scott, M. A. (2012). *Not just math and English: Courses that pose obstacles to community college completion* (CCRC Working Paper No. 52). New York, NY: Columbia University, Teachers College, Community College Research Center.

Funding for this research was provided by The Andrew W. Mellon Foundation. The authors appreciate comments from Thomas Brock.

Suggested citation: Pippins, T., & Belfield, C. R. (2019). *Humanities and liberal arts education at community college: How it affects transfer and four-year college outcomes*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Community College Research Center

Teachers College, Columbia University

525 West 120th Street, Box 174

New York, New York 10027

212.678.3091

ccrc@columbia.edu

@CommunityCCRC

ccrc.tc.columbia.edu