

Community College Effects on Students: A Review of Recent Evidence

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Major Conclusions From the Evidence

- Students aspiring to a bachelor's degree who initially enroll in community colleges are about 15% less likely to complete a bachelor's degree in the same period of time as similar students who initially enroll in four-year colleges.
- Community college students who transfer to a four-year college and complete their bachelor's degree do about as well in the labor market as similar students who initially enroll in four-year colleges.
- Initial attendance at a community college may allow a student to transfer to a more selective four-year college than he or she might have attended right out of secondary school.
- Community college degrees or credentials in and of themselves provide substantial economic advantages over a high school degree (e.g., the estimated premium for an associate degree was about 18% for men and 26% for women).
- The economic returns to an associate degree vary considerably by field of study.
- The economic premium one receives from completing community college credits is increased if one completes a coherent program of study (e.g., an associate degree).
- Community colleges may be fostering student talent along a variety of cognitive and developmental dimensions with about the same degree of proficiency as many four-year colleges.
- In estimating the effects of community colleges on students it is important to consider their relatively lower costs compared to both public and private four-year colleges.

There can be little doubt that two-year community colleges are major players in the national system of postsecondary education. Currently, two-year institutions constitute about 28% of all U.S. colleges and universities and enroll about 37% of all students. Furthermore, most growth trends and projections clearly suggest that community colleges are one of the fastest growing sectors in the postsecondary system. For example, Terenzini (1996), citing evidence from the National Center on Education Statistics (1994) and the Chronicle of Higher Education: Almanac Issue (1995), points out that between 1978 and 1991, enrollment in two-year colleges rose by 31% (versus 23% for four-year institutions); and two-year college enrollments are expected to increase another 11% by 2003.

Why is it, then, that, with a few notable exceptions in the literature, we know so little about the impacts of community colleges on their students? In 1991 Pat Terenzini, of Penn State University, and I published a book entitled: How College Affects Students: Findings and Insights from Twenty Years of Research. In that book we review and synthesize over 2600 studies on the effects of postsecondary education on students. That's a lot of research, but as we developed our synthesis we realized that it was almost totally skewed in the direction of students in four-year colleges and universities. While it may be true that nearly four out of every ten American college students are attending community colleges, it would be a very liberal estimate to say that even 5% of the 2600+ studies we reviewed for How College Affects Students focused on community college populations. (Perhaps a more accurate, though less marketable, title for our book would have been: How Four-Year Colleges Affect Students.) As we have stressed elsewhere (Pascarella, 1997; Pascarella & Terenzini, 1998), this empirical black hole means that we are functioning largely in ignorance of the educational impact of one of the nation's most significant social institutions.

There are probably a number of reasons why, up until recently, the postsecondary research community has largely ignored community colleges and the richly diverse, but nontraditional students who attend them. One likely reason is the presence of a rather virulent status hierarchy in our national system of postsecondary education. As we have argued elsewhere (Pascarella & Terenzini, 1998), a relatively small number of research universities and elite liberal arts colleges have set the academic and public standard for what most Americans believe higher education is or should be about. The hallmarks of these institutions include such factors as faculty with strong research or scholarly orientations, selective admissions policies, and undergraduate student bodies that are largely residential, full-time, traditional age, non-working, non-minority, and of middle- or upper middle-class social origins. Significant numbers of people inside and outside higher education believe that such institutions provide the highest quality undergraduate education possible; and the more an institution deviates from this set of standards, the lower it is ranked in terms of prestige or perceived educational excellence, and the more invisible it becomes. By the time one gets to community colleges, with their open admissions policies, faculties rewarded essentially for teaching, and their disproportionate numbers of non-resident, part-time, older, non-white, and working class students, one is virtually off the radar screen in terms of public recognition or concern (Dougherty, 1994). Add to this the fact that part-time, working, commuter students are extremely difficult to study, plus the fact that community colleges may often lack the institutional resources to support ongoing assessment and research efforts, and it becomes readily apparent why we know relatively so little about the educational impact of community colleges.

The serious danger, of course, is that in the absence of systematic research evidence, higher educational policy makers will rely on unsubstantiated beliefs, stereotypes, and even

publicly accepted myths in making judgments about the educational effectiveness and funding priority of community colleges. Unfortunately, as Dougherty (1994) points out, the dominant view of both the higher education establishment and the public at large is that community colleges form a “peripheral part of the collegiate system, a catch basin for those few students unable or unwilling to enter ‘regular’ colleges” (p. 3). As such, community colleges are frequently perceived as offering a second-best educational experience that penalizes students intellectually, socially, occupationally, and economically when compared to those students who attend four-year institutions.

Fortunately, there is a relatively modest, but growing body of evidence on the impact of community colleges on students; and that evidence suggests that the reality is somewhat more complex than what is perhaps the prevailing belief. What I will turn to now is a selective review of some of the major findings of that research. I will give greatest weight to findings from the most methodologically valid studies; that is, studies that attempt to control for important confounding influences such as student aptitude, aspirations, family socioeconomic origins, ethnicity, and the like. (In other words these studies attempt to separate the unique effects of the institution from the effects of the individual characteristics and aptitudes of the students it enrolls.) As a body of evidence the findings of this research support neither the community college’s most vocal apologists nor its most caustic critics. As with much social science inquiry the truth appears to fall somewhere in between.

Attaining the Bachelor’s Degree

Research on the educational attainment of two-year and four-year college students perhaps reflects the extent to which community colleges with distinctively different institutional missions than four-year institutions have, nevertheless, been held to the standard of four-year

colleges and universities. Most of this research has attempted to determine whether students enrolling in community colleges who initially plan on obtaining a bachelor's degree actually do obtain a bachelor's degree at a rate similar to their counterparts in four-year institutions. The clear weight of evidence from this research suggests that students planning on a bachelor's degree who begin postsecondary education at community colleges are about 15 percent less likely to complete a bachelor's degree in the same period of time as similar students who start at four-year colleges and universities. This difference in rate of bachelor's degree completion persists even in the presence of controls for such alternative causes as academic ability, high school grades, overall degree plans, work responsibilities, family social origins, and college grades (e.g., Alba & Lavin, 1981; Dougherty, 1987, 1992, 1994; Kinnick & Kempner, 1988; Lavin & Crook, 1990; Nunley & Breneman, 1988; Pascarella & Terenzini, 1991; Velez, 1985).

Postsecondary scholars have suggested a number of explanations for why beginning postsecondary education at a two-year college might be negatively linked to rate of bachelor's degree attainment. One explanation tends to be largely structural and focuses on the difficulties involved in transferring from a two-year to a four-year institution to complete one's degree. Problems in securing acceptance, obtaining financial aid, and transferring credits can pose nontrivial administrative obstacles in transferring from two-year to four-year institutions (Dougherty, 1992, 1994; Grubb, 1991; Nora, 1993; Nora & Rendon, 1990). A related problem involves adjusting to the academic demands and unfamiliar social milieu of a four-year institution subsequent to transfer. Problems in such adjustment perhaps partially explain why a significant number of two-year college students experience a drop in grades after transferring (Dougherty, 1992, 1994; Kintzer & Wattenbarger, 1985).

A second explanation is that community colleges themselves play a role in inhibiting

students' educational attainment by lowering their educational plans or aspirations. This has sometimes been called the "cooling out" phenomenon or hypothesis (Clark, 1960, 1980). It suggests that public two-year college systems are essentially a form of tracking in which the disproportionate numbers of non-white, working class, and lower-middle-class students who attend community colleges are "cooled out" and led away from the path to a bachelor's degree. Specifically, the cooling out process is one in which the curriculum, the socializing agents of the college (i.e., faculty and peers), and administrative procedures combine to lower students' educational aspirations and plans (Brint & Karabel, 1989; Hunt, Klieforth, & Atnell, 1977; Karabel, 1972, 1974).

Interestingly there is recent replicated evidence to support the "cooling out" phenomenon. Comparing evidence from 5 community colleges and 18 four-year institutions participating in the federally-funded National Study of Student Learning we (Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1998) found that, with controls made for important confounding influences, such as precollege educational plans, socioeconomic status, academic motivation, academic ability, and college grades, community college students initially planning on obtaining a bachelor's degree were between 20% and 30% more likely than similar four-year college students to lower their plans below a bachelor's degree by the end of the second year of college. Even more pronounced results are reported by McCormick (1997) in analyses of the nationally representative High School and Beyond data base. Controlling for such factors as demographic characteristics, family factors, initial educational plans, high school preparation and ability, he found that the likelihood of lowering one's educational plans below a bachelor's degree were about 60% higher for those who start at a public community college than for students who initially enrolled in a four-year institution.

Replicated findings in the social sciences are so rare that there is a real temptation to accept these results at face value. However, I wonder seriously if differences in the clarity or certainty of precollege educational plans between community college and four-year college students may confound the entire body of findings concerning the relative effects of two- and four-year college enrolment on subsequent educational plans and educational attainment. For example, it may simply be that substantial numbers of students who initially enter two-year colleges for the ostensible purpose of obtaining a bachelors degree have unclear or undeveloped educational plans to begin with. Manski (1989) and Grubb (1996) have both suggested that many students in community colleges are *experimenters* who may indicate that they want a bachelor of arts degree but are actually somewhat unsure of what they want to do, and they have no way of finding out except by experimenting with postsecondary education in low-cost institutions. For these students community college attendance may function not so much to cool out genuinely held aspirations or plans, but rather to assist them in clarifying aspirations or plans that may be undeveloped, unclear, or perhaps even unrealistic. Those who decide that a bachelor's degree is not for them may look as though they have been cooled out by the community college. However, from another perspective "they could be considered successes in the sense that they have gotten the information necessary to make informed decisions" (Grubb, 1996, p. 62). Unfortunately, we have no way of ascertaining the extent to which this possibility may be biasing the findings of this body of research.

Relative Labor Market Returns

Regardless of how one views the underlying causal linkages between two- and four-year college attendance and rate of bachelor's degree completion, it is clear that educational attainment plays a determinant role in the labor-market returns of postsecondary education.

However, any relative disadvantages of community college students in bachelor's degree attainment do not necessarily translate into long-term labor-market disadvantages. With some possible exceptions (e.g. Monk-Turner, 1990) the weight of evidence would suggest that for those community college students who can overcome the obstacles of transfer to a four-year institution and complete their bachelor's degree there appears to be an essential parity with similar four-year college students in such areas as stability of employment, job satisfaction, job prestige, and earnings (Anderson, 1984; Smart & Ethington, 1985; Whitaker & Pascarella, 1994). For example in the most recent study, which also follows students furthest in their careers, Whitaker and Pascarella (1994) analyzed data from the 1986 follow-up of the National Longitudinal Study of the High School Class of 1972. With statistical controls made for such factors as race, sex, socioeconomic origins, self-esteem, high school grades and extracurricular involvement, precollege educational and occupational aspirations, college grades and educational attainment, students initially enrolling in community colleges had levels of occupational prestige and earnings that differed in only trivial and non-significant ways from their counterparts who initially enrolled in four-year institutions.

Generally consistent with the notion that one is not necessarily penalized in the labor market for initial enrollment at a community college is a recent study by Hilmer (1996, 1997). Hilmer analyzed data from the nationally representative High School and Beyond data base, and attempted to determine if students who transfer from community colleges to four-year institutions end up at four-year institutions that are higher or lower in selectivity (average student body combined SAT Verbal and Mathematics scores) than similar students who enter four-year institutions from high school. In the presence of controls for such factors as sex, ethnicity, parents' education and income, high school activities and grades, and standardized measures of

reading and mathematics ability, Hilmer found that community college students transferred to four-year institutions that had average student-body SAT scores 32 points higher than the four-year institutions attended by similar students right out of high school. In short the results suggest the intriguing possibility that students are able to attend more selective universities if they first attend community colleges. Additional findings suggest that the institutional selectivity benefit is largest for community college students who came from poor families, are of low ability, or performed poorly in high school. Community college students whose family wealth, test scores, or high school grades were more than one standard deviation below the mean transferred to universities that had average student body SAT scores that were up to 75 points higher than those attended by similar students directly out of high school. Conversely, high ability, high income, and high performing community students lost little or nothing in terms of institutional selectivity.

While the magnitude of the benefit is not totally clear (e.g., James, Alsalam, Conaty, & To, 1989; Knox, Lindsey, & Kolb, 1993; Pascarella & Terenzini, 1991, Rumberger & Thomas, 1993), there is little doubt that institutional selectivity is linked consistently with increased economic returns to a college degree. Thus, Hilmer's (1996, 1997) findings are potentially important in that they suggest that community colleges can provide a strategic path to the upward economic mobility of transfer students – particularly those from low income backgrounds who did not perform particularly well in secondary school.

Returns to Sub-Baccalaureate Education

There has been considerable debate over the labor-market returns of community college education, and there are a number of skeptics who question its value (e.g., Pincus, 1980; Brint & Karabel, 1989). Recently, however there have been a number of thorough analyses of nationally representative data sets addressing the economic returns to community college degrees. Most of

the published work in this area has been done by Grubb (1995, 1996, 1997) and Kane & Rouse (1995), although there is also recent unpublished, but confirmatory, work reported by Surette (1997). The data sets employed in these analyses have been the National Longitudinal Study of the High School Class of 1972 (1986 follow-up), the National Longitudinal Study of Youth (1976 through 1983 high school graduates followed up in 1990), and the 1984, 1987, and 1990 cohorts from the cross-sectional Survey of Income and Program Participation, which includes individuals between the ages of 25 and 64. In the analyses conducted statistical controls are made for various important confounding variables such as race, socioeconomic origins, secondary school grades, ability (as measured by test scores), job experience, job training, marital status, and the like (depending on the data set employed).

I took the results of these many published analyses and tried to compute an average economic benefit to an associate degree (versus a high school degree). Across all analyses reported for these five different samples I found that men with an associate degree had an average advantage of about 18% over the annual earnings of men with a high school degree. For women the effects were bigger. On average women with an associate degree had about a 26% advantage over the annual earnings of their counterparts with a high school degree. While these are naturally not as large as the corresponding estimated effects of a bachelor's degree (39% for men and 40% for women), they are, nevertheless non-trivial and generally statistically significant earnings advantages. [Another perspective on the returns to an associate degree is suggested by recent census data on median family income. In 1996 the median, family income of a householder with a bachelor's degree was 167% of the median family income of a householder with a high school degree. The corresponding median family income advantage of a householder with an associate degree versus a high school degree was 133% (U. S. Bureau of the

Census, 1997)].

Five additional trends in this body of evidence are worth mentioning. First, the economic return to an associate degree (as with a bachelor's) degree appears to vary considerably by field of study. The largest payoffs appear to be in technical fields (engineering/computers) and business for men, and business and health for women. Second, the returns to an academic associate degree for those who do not transfer to four-year colleges can be low or uncertain. A corollary to this conclusion is found in recent evidence from the 1986 follow-up of the 1980 High School and Beyond data base. A series of analyses conducted by Kerckhoff and Bell (1998) suggest that postsecondary vocational credentials have an earnings return roughly equal to those of associate degrees. Third, the returns to both vocational and academic associate degrees are highest when an individual has employment that is related to his or her field of study (Grubb, 1995, 1996, 1997). Fourth, there is some evidence to suggest that, while there can be significant monetary returns to completing community college credits (e.g. Kane & Rouse, 1995; Leigh & Gill, 1997) there is a credentialling effect for the associate degree. That is, there is a greater economic return to completing a specific coherent program of study, as indicated by obtaining an associate degree, than there is in taking 2 years worth of community college courses without completing one's credential. This evidence is somewhat stronger in the analyses conducted by Grubb (1996, 1997) than it is by Kane and Rouse (1995), who found a significant credentialling effect for the associate degree for women, but not men. Finally, across all the evidence I reviewed from national data bases (e.g. Grubb, 1996, 1997; Kane & Rouse, 1995; Kerckhoff & Bell, 1998) it would appear that the economic returns from both associate degrees and vocational credentials are somewhat more pronounced for women than for men.

Developmental Impacts of Community Colleges

Recently, a small body of evidence has emerged on the relative developmental impacts of community colleges and four-year colleges. Most of these findings come from the federally funded National Study of Student Learning. The samples are relatively small (6 community colleges from 6 different states and 18 four-year schools from 15 different states) so the findings are at best preliminary. However, because this is one of the few longitudinal studies that uses standardized measures of developmental outcomes, the findings are also quite intriguing. For example, a series of published studies (Bohr, Pascarella, Nora, Zusman, Jacobs, Desler, & Bulakowski, 1994; Pascarella, Bohr, Nora and Terenzini, 1995; Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1995-96) compared the relative cognitive gains of community college students with similar students from four-year institutions. The standardized tests used in these two studies were taken from the Collegiate Assessment of Academic Proficiency (CAAP), developed by the American College Testing Program (ACT, 1991). The five CAAP tests measure reading comprehension, quantitative reasoning, critical thinking, science reasoning, and writing skills, and are designed specifically to measure intellectual skills and capabilities acquired during the first two years of an undergraduate education. With controls made for such confounding influences as precollege CAAP scores, sex, race, academic motivation, place of residence, full or part-time enrollment, and type of coursework taken, no significant differences were found between community college and four-year college students on end-of-first year reading comprehension, quantitative reasoning, or critical thinking (Bohr, Pascarella, Nora, Zusman, Jacobs, Desler, & Bulakowski, 1994; Pascarella, Bohr, Nora, & Terenzini, 1995). Subsequently, a similar analysis found trivial and statistically non-significant differences between community college students and four-year college students in end-of-second-year

writing skills and science reasoning (Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1995-1996). Since these results are not taken from randomized experiments it is important to be clear about what they do and do not mean. They do not mean that community college students end up with the same levels of cognitive proficiency in reading, math, critical thinking, science reasoning, or writing skills as four-year college students. Indeed, our findings suggest that, across the entire sample, four-year college students start out higher than community college students on all five tests and end up higher. Rather, what these findings suggest is that, when confounding influences are taken into account, two-year college students change essentially the same amount on these five dimensions of cognitive growth as four-year college students. Put another way, given the cognitive capabilities of the students they enroll, community colleges may be developing talent at about the same level of proficiency as most four-year colleges.

Consistent with these findings, additional analyses of the National Study of Student Learning data base have found only trivial and non-significant differences between community college and four-year college students on first-year growth in such orientations toward learning as enjoyment of intellectual challenge and diversity and engagement of higher-order cognitive tasks (Pascarella, Bohr, Nora, Ranganathan, Desler, & Bulakowski, 1994). More recent work has suggested that community college students may actually make significantly larger first-year gains in internal locus of attribution for academic success or failure than four-year college students. These greater relative gains for community college students persist in the presence of controls for such potential confounding influences as precollege locus of attribution, academic ability, and academic motivation, race, sex, full or part time enrollment, and patterns of coursework taken (Pascarella, Edison, Hagedorn, Nora, & Terenzini, 1996).

SUMMARY

The relatively small, but steadily growing, body of evidence on the impacts of community colleges on students suggests that reality may be more complex than popular belief. On the one hand there is the often replicated (if hotly debated) finding that community college attendance may have a dampening effect on completion of a bachelors degree. Yet, there is also evidence to suggest that when community college students transfer to four-year colleges and complete their bachelor's degree they are about as competitive in the labor market as similar students who initially start at four-year colleges. Similarly, there is evidence to suggest that community colleges may be fostering student talent along a variety of cognitive and developmental dimensions with about the same degree of proficiency as many four-year colleges and universities. Community college attendance may well be an asset in terms of the academic selectivity of the four-year institution to which one transfers, particularly for those students from low income backgrounds who did not perform particularly well in high school; and there is ample evidence to indicate that community college degrees or credentials in and of themselves provide substantial economic advantages over a high school degree.

Viewed in its entirety this body of evidence is perhaps more significant when one considers the relatively lower costs of attending a community college versus a four-year college or university. For example, a recent study of college costs conducted by the American Council on Education (Hartle, 1998) reports that the average yearly tuition costs of a public community college are only about 44% of the average in state tuition costs of a four-year public university, and only about 10% of the average tuition costs of a private four-year institution. In terms of average estimated total yearly costs public community colleges were 60% of four-year public institutions and 24% of private four-year institutions. Thus, community colleges may, in fact,

provide a relatively cost effective way for substantial numbers of students to obtain the first two years of postsecondary education without necessarily sacrificing the intellectual/developmental impact of their college experience or their relative competitiveness in the marketplace.

The existing body of evidence on the impacts of community colleges on students is indeed thought provoking. However, it constitutes merely a trickle when what we need is a steady flow of investigations. We still have much to learn about this very important, but largely ignored student constituency. The nature of community colleges and the characteristics and enrollment patterns of the student they serve makes the study of community colleges' impacts extremely challenging. However, we cannot afford to continue to operate in ignorance of the educational influence of a set of nearly 1300 postsecondary institutions that educate almost 40% of our students.

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