Community College Journal of Research and Practice
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713722788

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Online publication date: 14 July 2010

To cite this Article Park, Sueuk and Pascarella, Ernest T.(2010) 'Community College Attendance and Socioeconomic Plans', Community College Journal of Research and Practice, 34: 9, 700 — 716
To link to this Article: DOI: 10.1080/10668920701831589
URL: http://dx.doi.org/10.1080/10668920701831589

Community College Journal of Research and Practice, 34: 700–716, 2010

ISSN: 1066-8926 print/1521-0413 online
DOI: 10.1080/10668920701831589

Routledge
Taylor & Francis Group

COMMUNITY COLLEGE ATTENDANCE AND SOCIOECONOMIC PLANS

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Using data from the National Education Longitudinal Study, 1988 (NELS: 88), this paper documents differences in the socioeconomic plans of students in two-year and four-year colleges. We found attendance at a two-year college led to a modest but statistically significant disadvantage in socioeconomic plans. However, the impact of attending a community college on educational and occupational goals are conditional rather than general. That is, the negative impact on socioeconomic plans of attending a two-year college held for women but not men. Finally, according to our research, the negative effect of attending a two-year college differed in magnitude by an individual's tested cognitive preparation. In particular, attending a two-year college significantly reduced subsequent socioeconomic plans only for students with relatively high precollege test scores.

While community colleges have contributed to enhanced opportunity and access to postsecondary education, some scholars have argued that they function to "cool out" the educational aspirations of students, especially those from low-income and racial-ethnic minority

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groups (Cohen & Brawer, 1996; Grubb, 1989). Cooling out is explained as the ameliorative process through which individuals' aspiration is disassociated to avenues in education (Clark, 1960, 1980). Thus, the proposed cooling out function of community college preserves social stratification by reducing the opportunities for lower socioeconomic class students to enter bachelor's degree programs (Brint & Karabel, 1989; Dougherty, 1994). In other words, instead of fostering social mobility for lower class students, community colleges actually contribute to the reproduction of existing class differences (Grubb, 1984; Karabel, 1986). From this social reproduction perspective it would be anticipated that students in two-year colleges are socialized to have lower levels of educational expectations and occupational aspirations than their peers in four-year colleges. Indeed, Clark's (1960) hypothesis that two-year college systems play a role in lowering educational aspirations has been supported by a number of researchers (Cohen & Brawer, 1996; Lavin & Crook, 1990; Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1998). Although this hypothesis concerning the role of the community colleges in fostering social reproduction is plausible, it merits further examination. This paper studies the net effect of community college on educational and career goals.

The Positive or Negative Function of Attending a Community College

The appearance of community colleges in the higher educational system has played, in part, a positive role without doubt. Researchers who assert the contributions of community colleges in American higher educational system emphasize that those institutions have provided a special opportunity to adolescents who might not otherwise experience postsecondary education, and their assertion has been supported in many empirical studies (Kane & Rouse, 1995; Cohen & Brawer, 1996; Grubb, 1997). In this vein, the supporters of the community college have considered it as the most effective agent to lead democratization of higher education.

One of its important contributions on educational outcomes is to enhance, on average, any amount of the socioeconomic mobility of many individuals (Cohen, 1990). Research has shown that those with postsecondary education earn more than those who enter the job market with only a high school diploma (Pascarella & Terenzini, 2005; Averett & Dalessandro, 2001; Lin & Vogt, 1996; Nunley & Breneman, 1988). More significantly, the function of community

colleges is to increase the access to postsecondary education (Dougherty, 1994). Community college prepares students to transfer to a four-year college (Cohen & Brawer, 1987) and does not negatively affect the quality of institutions to which they transfer (Hilmer, 1997). Those transfer students are likely to complete a degree as are nontransfer students (Holahan, Green, & Kelley, 1983). Finally, community college is designed to provide a vast array of educational opportunities (Shaw, 1997) including vocational training, adult education, and literacy education. It has provided educational and occupational training in higher-status careers such as in the health and engineering technologies (Cohen, 1990). In this context, community colleges have contributed to increased educational opportunity for people who have been historically underrepresented in postsecondary education, particularly individuals from low-income and racial minority groups (Cohen & Brawer, 1996; Grubb, 1989). For individuals who desire to get a bachelor's degree, attending a community college also increases their average educational attainment (Leigh & Gill, 2003).

However, the positive effects of community colleges on educational outcomes are far from conclusive. By regarding it as a form of tracking, some studies have asserted that the community college system has selected and allocated students for further education and occupational placement (Bowles & Gintis, 1976; Brint & Karabel, 1989). While community colleges may guarantee opportunity for equal access to higher education, students who have begun their higher education at a community college have not realized equal outcomes or benefits compared to their peers who started at a four-year institution (Dougherty, 1994; Karabel, 1986). In this vein, scholars who insist that there is a "diversion effect" have emphasized that attendance at community college diverts educational or occupational aspirations of students—especially those from underrepresented groups—by reproducing the existing class structure (Brint & Karabel, 1989). In the same context, some research has focused more on the negative points of community college. Using national longitudinal surveys, Grubb (1991) concluded that over the last decades the likelihood of attaining a baccalaureate degree for students who begin their postsecondary education at a community college has dropped persistently. Another study shows that about 70% of two-year college entrants want to obtain a bachelor's degree as their educational goal, but only about 15% of them do (Kane & Rouse, 1999). Critics of the community college also question whether vocational programs of community colleges result in labor market payoffs (Brint & Karabel, 1989).

Educational and Career Aspirations of Students in a Community College

In addition to the effect on educational attainment, community college attendance has influence on forming the aspirations of adolescents in their education and occupation. One's aspiration for education and occupation has substantial impact on one's attainment (Sewell, Haller, & Portes, 1969). Therefore, the logic for community colleges and educational or occupational attainment can be identically applied to examine its effect on educational and job/career goals or the life-plans of individuals.

In a descriptive study, Laanan (2000) reported that although approximately 70% of students in selected public community colleges have a plan to get the associate's degree, more than three-fourths of them indicated a bachelor's degree and above as their ultimate goal. It suggests that for students, especially those who want to transfer to a four-year college, community colleges do not lower their educational aspirations. Another study asserted that the negative effect of community college on achieving students' educational outcomes was somewhat exaggerated (Alba & Lavin, 1981). According to the study, it is true that attending a community college reduces students' educational aspirations, but the magnitude is not large when controlling for differences in the students' academic background. Using the terms "differential and incremental aspirations effects" based on two main perspectives of community college effect in higher education (i.e., diversion and democratization effect), Leigh and Gill (2004) contended that there is a difference between types of college attended for educational aspirations of students; but attending a community college also contributes to expand the educational aspirations of students from disadvantaged groups.

In contrast, a considerable body of research has suggested that attendance at a two-year college has a negative influence on an individual's educational aspiration. Pascarella et al. (1998) found that community college students initially planning to obtain a bachelor degree were more likely to lower their plans by the end of the second year of college than were similar students attending four-year institutions. A similar finding was reported by McCormick (1990): students attending community colleges were about 40% more likely to lower their educational plans than similar students at four-year schools. There are some studies that indicate that students' lower educational aspirations are the result of the influence of community colleges' curriculum, faculty, and administrative procedures (Brint & Karabel, 1989; Hunt, Kleforth, & Atnell, 1977). In addition to those

organizational characteristics, entry into a community college may lower educational goals of individuals because of negative peer influences (Alexander & Eckland, 1977). The less-academic environment and excessive orientation to vocational programs at community colleges also lower students' expectation; and the lower expectations result in students' low-status occupational careers (McGrath & Spear, 1991).

Although there is a considerable body of studies that have explored the relationship between initial enrollment in a community college and occupational status attainment or economic payoffs (Whitaker & Pascarella, 1994; Dougherty, 1987; Lin & Vogt, 1996), the effect of community college on occupational aspirations is rarely studied. Therefore, the community college effect on occupational plans might be inferred by empirical results from the former.

Some research explored that while enrollment in a community college lowers educational attainment, it is not manifest in economic attainments, such as job prestige or earnings (Whitaker & Pascarella, 1994). In a study about community college students' career goals, Laanan (2000) thought that the community college is an ideal institution to develop career aspirations of individuals, especially high-school-graduates who want to gain the technical skills and knowledge for workforce of the future. However, others argued that there is a negative effect from community college attendance on job-market careers for its students. For example, Monk-Turner (1990) reported that students who begin higher education at a community college become disadvantaged in occupational achievement. In the case of Canada, Anisef, Ashbury, & Turrittin (1992) found that community college entrants already have lower occupational expectations while in high school; and university entrants have higher occupational attainment than those in community colleges for all postsecondary graduates. In this vein, the relatively low status in the job market of existing community college graduates, at least in part, may cause new graduates to choose less decent jobs and may lead to lower their occupational aspirations throughout their college careers.

General or Conditional Effects of Community College

Although community college attendance has a general effect on educational or economic outcomes, it may mask conditional effects based on individual characteristics. Most past research has not found conditional effects of community colleges versus four-year colleges on educational outcomes (Lee, Mackie-Lewis, & Marks,

1993; Pascarella et al., 1998). The negative role of community colleges on educational attainments exists regardless of other background variables. In other words, the educational attainment differences between two-year and four-year colleges persist even when potentially confounding causes, such as family socioeconomic status, academic ability, and so on, are controlled (Dougherty, 1987; Velez, 1985). This result was observed by some scholars who argued that net conditional effects between two- and four-year colleges do not exist on educational attainment or aspirations (Crook & Lavin, 1989; Pascarella et al., 1998). However, Swanson (2002) observed that female students, when compared to males, may more rapidly reduce their educational aspirations and are less likely to benefit from beginning their higher education at a four-year college. Others reported that the economic return to a bachelor's degree is greater for a female than for a male (Averett & Dalessandro, 2001).

Pascarella and his colleagues have argued that there was a general parity between types of colleges attended on developing students' cognitive ability (Pascarella, Bohr, Nora, & Terenzini, 1995, Parcarella & Terenzini, 2005). Those studies found a difference between two-year and four-year colleges in developing cognitive ability; however, they did not reveal how the effect of a community college entrance on forming ambitions is conditioned by the precollege cognitive ability of students. Not a few students with high test scores in high school still chose a community college as their initial higher educational institution; such students had various environmental factors around them including various financial and economic situations. For these students, the negative impact of attending a community college means a kind of brain waste. Nevertheless, studies about the lowered educational expectation and attainment of students with high test scores has rarely been paid attention to in the field of higher education. Therefore, to explore a conditional effect of precollege test scores between a two-year and a four-year college entrants may supply important suggestions to policy-makers and researchers.

RESEARCH QUESTIONS

Much existing research has examined the negative influence of attending a community college on educational attainment in the U.S. It is now necessary to examine the net effect of those community colleges on students' educational expectation and occupational aspiration, focusing also on conditional factors which may affect the outcomes.

This study sought to contribute greater understanding to this issue by estimating the net impact of attending a two-year (versus four-year) college on students' educational and occupational plans. In so doing, it sought answers to three specific questions:

1. **To what extent do students in two-year colleges differ in academic preparedness and family socioeconomic background than their peers in four-year colleges?**
2. **Net of demographic and other background characteristics, are individuals who begin postsecondary education at two-year colleges more likely to lower their educational and occupational plans than students who start at four-year colleges?**
3. **Are the effects of attendance at a two-year (versus a four-year) college on educational and occupational plans general or conditional? That is, are they essentially the same for all students (general effects), or do they differ in magnitude for different kinds of students?**

METHOD

Data

For this study, we used the National Education Longitudinal Study (NELS: 88–94) data, which were collected by the National Center for Education Statistics (NCES). The NELS contains data for a cohort of students in the eighth grade (1988), when they are high-school sophomores (1990), when they are high-school seniors (1992), and two years after their scheduled high-school graduation (1994). We restricted the sample to students who were enrolled at two-year public colleges and four-year private or public colleges from January to December 1993. Because of differential nonresponse rates for each item, we report the results of the weighted-sample analyses. The 1988–1994 NCES panel weight (F3PNLWT) is appropriate for approximating the population of 1992 high-school graduates from the sample. To minimize the influence of an artificially large sample and to obtain correct standard errors, we created a relative weight which divided the NCES panel weight by the average weight for the sample (Thomas & Heck, 2001). The adjusted weighted sample used in these analyses is 2,663 respondents.

The dependent variable was a composite of two items. The first consisted of individual educational plans. This was coded as 1 if plans

were to complete a two-year degree or below, as 2 if planning to obtain a bachelor's degree, as 3 and 4 if planning to obtain a master's degree or doctoral or professional degree. The second item was an individual's responses on expected occupation at age 30. Each occupational category was linked to Duncan's SEI (Socioeconomic Index) that was revised by Featherman and Stevens (1982) and was then sorted by six categories such as, professionals, technicians (including school teacher), managers and owners in retail, administrative and service workers, and craft workers and laborers. To make those two subitems a single standardized variable, each of them was transformed as Z-scores and then a new averaged variable was created. Thus, the composite variable was called socioeconomic plans. The independent variable in all analyses was a dummy variable coded 1 if the student attended a two-year public college and 0 if the student attended a four-year public or private college.

Analyses

The analyses were conducted in three stages. In the first stage, we regressed socioeconomic plans on a dummy variable representing attendance at a two-year (versus a four-year college) and an extensive set of controls. These controls included precollege socioeconomic aspiration (calculated by same method as socioeconomic plans); gender; a dummy variable for race (1 if White); family socioeconomic prestige (NELS 88–94 data have a single family SES variable which is created by parents' education, occupation, and total household income information); high school program based on a transcript (1 if academic program); and tested precollege academic ability (composite score of standardized IRT (Item Response Theory) reading and math scores).

In the second stage of the analyses, we estimated the net direct effects of attending a community college on the respondents' socioeconomic plans. To estimate direct effects on socioeconomic plans, we added college experience variables such as hours worked per week both of on- and off-campus for pay (standardized as Z-score), academic fields/major, enrollment status, and extracurricular activity. For academic fields included, we constructed five groups of fields similar to the ones used by Toutkoushian (1998) such as arts and humanities, social sciences, physical sciences, professional fields, and all other fields. Enrollment status is 1 if full-time, and extracurricular activity was recoded as 1 if participating at least in a single activity.

The third stage in the analyses sought to determine the presence of conditional effects of community college students on socioeconomic

plans. We created cross-products of attending a community college with gender, race, family SES, and high school program. This set of cross-product terms was then added to the total effects equation described above. A significant R^2 increase associated with the set of cross-products indicated the presence of conditional effects. The condition being met, we then examined the nature of individually significant conditional effects.

Based on results of the third stage of the analysis, we split the sample by gender and also split the IRT score into two categories by median value (i.e., high and low score). The difference between each category allows us to interpret how the effect size of community college attendance on socioeconomic plans varies by gender as well as cognitive ability.

RESULTS

It may be that the expectation of a negative effect of two-year college attendance on educational outcomes is premature. Table 1 shows descriptive statistics for selected variables of interest and compared between two- and four-year college samples by *t* test. First, some research has asserted that two-year colleges tend to enroll individuals who are less academically prepared or less oriented toward learning than those enrolling in four-year colleges (Dougherty, 1987). According to data from the National Educational Longitudinal Study, 1988 (NELS: 88) used in this paper, however, there is no significant difference between two- and four-year colleges for composite test score (see Table 1).

Second, some studies (Brint & Karabel, 1989; Pincus, 1980) insist that challenges faced by community colleges generally are due to the fact that the family background of students in a two-year college differs significantly from those in a four-year college. Those

Table 1. Weighted means and standard deviations for some variables of interest

	Two-year college	Four-year college	*t*-test
Socioeconomic plans	−.066 (.837)	−.011 (.828)	−1.932†
Presocioeconomic plans	−.052 (.818)	.005 (.795)	−2.077*
Family socioeconomic status	.327 (.703)	.308 (.740)	.801
Composite test scores	55.0 (8.077)	54.9 (8.031)	.302

†$p < .10$; *$p < .05$. Parentheses mean a standard deviation.

researchers had perceived that community college students have a poorer socioeconomic background than four-year college entrants and, thus, have lower amounts of capital (both financial and cultural) from which to draw. However, the NELS: 88 data show that the differences in SES between two- and four-year college students are not significant. Therefore, one cannot summarily conclude that the lower educational plans of students enrolled in community colleges are due to the socioeconomic background of the students. Rather, the results from this study demonstrate that they may be caused by significant differences in precollege socioeconomic plans between two-versus four-year college entrants (t value is -2.077).

Total and Direct Effects

The estimated total and direct effects of attending a two-year (versus a four-year) college on socioeconomic plan are summarized in Table 2. A negative signed coefficient represents a disadvantage for students attending a two-year college relative to their counterparts at a four-year college. As the data in the table indicate, two-year college attendance had significant negative total and direct effects on educational aspirations and occupational expectations.

As shown in Table 2, net of student precollege socioeconomic plans, gender, race, family socioeconomic status, high school

Table 2. Estimated total and direct effect of attending a two-year (versus a four-year) college on socioeconomic plans

	Total effect[a]		Direct effect[b]	
Dependent variable	**Metric regression coefficient**	**Effect size[c]**	**Metric regression coefficient**	**Effect size[c]**
Socioeconomic plans	$-.069^{*}$	$-.082$	$-.071^{*}$	$-.086$
R^2 total model	$.277^{**}$		$.297^{**}$	

[a]The regression equation also includes controls for: precollege socioeconomic plan, gender, racial group, family socioeconomic status, program in high school, and composite test score.

[b]The regression equation also includes controls for all variables in superscript "a" plus the following: hours worked per week, academic fields, enrollment status, and extracurricular activity.

[c]Effect size is the metric regression coefficient divided by the standard deviation of the dependent variable. It indicates the amount of a standard deviation a two-year college student is disadvantaged relative to those who attend a four-year college on any given dependent measure.

$^{*}p < .05$; $^{**}p < .01$.

academic program, and composite test scores, attendance at a two-year versus a four-year college had a very modest but statistically significant negative total effect on socioeconomic plans. More specifically, attendance at a two-year college led to a statistically significant disadvantage in socioeconomic plans of about .082 of a standard deviation. This effect size can also be interpreted in terms of the percentile gains for students at a community college. In other words, 0.8 in effect size indicates that the socioeconomic plans of the average community college entrants would be three percentile points lower than those of the average four-year college entrants (see the appendix in Marzano, Pickering, & Pollick (2001)'s book for the full conversion table for transforming effect size to percentile gains).

When college experience variables (i.e., hours worked per week, academic fields, enrollment status, and extracurricular activity) were added to the total effects equation, the small but significant negative impact of attendance at a two-year college on socioeconomic plans was not diminished (−.086 effect size). This suggests that the effect of attending a two-year college on socioeconomic plans is not reduced when college experiences are taken into account.

Conditional Effects

The results of the total and direct effects equations, however, masked the presence of significant differences in the impact of two-year colleges by sex and cognitive test scores. That is, the impacts of attending a community college on educational and occupational goals are conditional rather than general and, thus, the net effects of institutional type were not the same for all students. The nature of these statistically significant conditional effects is shown in Table 3.

As the table indicates, the negative impact on socioeconomic plans of attending a two-year (versus four-year) college was significantly more pronounced for women than for men. Indeed, the negative effect was statistically significant for women but trivial and nonsignificant for men (−0.94 effect size). When adding college experiences, the negative impact of females still persisted. These results suggest that females seem are disadvantaged more in educational and career expectations from attending a community college. And there is gender gap, not only in the experience of college but also, potentially, in the impact of college attended. Conversely for males, entering community college rarely seemed to affect their plans for socioeconomic status attainment.

Table 3. Estimated total and direct effect of attending a two-year (versus a four-year) college on socioeconomic plans by gender and test score

	Male				Female			
	Total effect[a]		Direct effect[b]		Total effect[a]		Direct effect[b]	
Dependent variable	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]
Socioeconomic plans	−.008	–	−.035	–	−.132**	−.158	−.094*	−.113
R^2 total model	.356**		.369**		.222**		.259**	
	High score				**Low score**			
	Total effect[a]		Direct effect[b]		Total effect[a]		Direct effect[b]	
	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]	Metric regression coefficient	Effect size[c]
Socioeconomic plans	−.115**	−.204	−.149**	−.196	−.023	–	−.026	–
R^2 total model	.219**		.257**		.227**		.240**	

[a]The regression equation also includes controls for precollege socioeconomic plan, gender, racial group, family socioeconomic status, program in high school, and composite test score.

[b]The regression equation also includes controls for all variables in superscript "a" plus the following: hours worked per week, academic fields, enrollment status, and extracurricular activity.

[c]Effect size is the metric regression coefficient divided by the standard deviation of the dependent variable. It indicates the amount of a standard deviation a two-year college student is disadvantaged relative to those who attend a four-year college on any given dependent measure.

*$p < .05$; **$p < .01$.

Similarly, the negative effect of attending a two-year college differed in magnitude by an individual's tested cognitive preparation. For students in the lower half of the distribution of test scores, attendance at a two-year college had no significant impact on socioeconomic plans. However, for students in the upper half of precollege test scores attendance at a two-year college significantly reduced subsequent socioeconomic plans. The disadvantage for students with talent in a community college is 0.2 of a standard deviation, indicating that their socioeconomic plans are lower about eight percentile points than their counterparts in a four-year college.

CONCLUSIONS AND IMPLICATIONS

Brint and Karabel (1989) contended that "the community colleges found themselves in a situation of structured subordination with respect to both other higher education institutions and business" (p. 17). The recognition of the subordination in educational and occupational hierarchy might lower goals or plans of community college students in future life. It means that community college attendance cools out rather than warms up individuals' educational and career ambitions. This assumption has been supported by some literature. There are studies that show that although community college entrants have similar or higher aspirations than four-year college entrants, those who begin at a community college realize the stated goals less frequently than those who begin at a four-year college (Brint, 2003; Kane & Rouse, 1999).

Basically, our findings from this study tend to support the Clark's (1960) cooling out hypothesis, but in a conditional rather than a general manner. Controlling for students' precollege socioeconomic plans and various other confounding influences, students who attended a two-year college had modestly lower socioeconomic plans than their peers who attended a four-year college or university. The more important findings of this paper, however, suggest that not all students may have their socioeconomic plans lowered by community college attendance. For total and direct effects of attendance at a two-year college, we found a result consistent with existing studies reporting a cooling out effect of community college attendance (Pascarella et al., 1998; McCormick, 1997; Cohen & Brawer, 1996; Grubb, 1989). However, the results of the conditional effects analyzed suggest that the cooling out effects of two-year college attendance vary with individual characteristics such as gender and tested cognitive ability. Thus, although attendance at a community college may contribute to a lowering of socioeconomic plans, it does not do so for all students.

According to existing research, after graduating from a two-year college women are more likely to be disadvantaged in a range of social or economic benefits of education such as educational attainment, occupational status, and earnings (Whitaker & Pascarella, 1994). A preference for a male labor force in society can be considered to explain those disadvantages of women who gain an associate degree. Lee and Frank (1990) insist that due to recognition of discrimination inherent in the job market, women who graduate from community colleges seem to have lower educational or occupational aspirations and so try to transfer for a bachelor degree less often compared with males. In particular, Monk-Turner (1990) reported

evidence of a sexual difference for occupational achievement based on community college attendance. According to her, female community college entrants experience the lower occupational return for each year of education compared to four-year college entrance. Considering the rise of women entering higher education, especially female students of color, who often begin their postsecondary education at community colleges, further studies to find the cause of this disparity for women are strongly recommended.

The finding that community college entrants with high precollege cognitive ability are more cooled out than their counterparts with lower precollege cognitive ability suggests that a less intensive academic atmosphere in two-year colleges may lead those students to lower their academic aspirations. Therefore, in the context of this body of research on the impact of two-year colleges, it is important to consider other aspects of the social-psychological environment (Pascarella et al., 1998). In addition, the negative effect for higher than average cognitive ability students is deeply troubling considering that large states like California are looking to the community college system to ease overcrowding issues in their four-year colleges.

For educational and occupational expectations, community college population is not homogeneous. In a community college, some people want to have vocational training for technical or semiprofessional jobs, and some consider it as a kind of springboard for entering a four-year college. Others use it as a community center for avocation (Brint, 2003). Therefore, prior to discussing the problem of lowering socioeconomic plans for community college attendants, it is important to understand their different reasons for entering into the institution.

The community college has heterogeneous groups for expectation in education and occupation. Thus, community college administrator or advisors must suggest different paths to students with different purpose to protect amelioration of their expectations. Especially for baccalaureate aspirants in community colleges who want to transfer to four-year institutions, community college faculties and staffs encourage them to purse realizable goals or plans for socioeconomic status.

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