

META-ANALYSIS: FIRST-GENERATION / LOW-INCOME OUTREACH
PROGRAM DEVELOPMENT

HUMBOLDT STATE UNIVERSITY

By

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Abstract

The following paper is a meta-analysis of the relevant literature surrounding first-generation / low-income student barriers to high school graduation, as well as college entrance and success. This paper details what research indicates outreach programs should provide to first-generation / low-income students to overcome such barriers and suggests what components and characteristics are important in the development of academic outreach programs to help reduce the inequality gap.

Although there is abundant research surrounding first-generation / low-income student needs and what various programs provide, current research does not address the intersections of student need, successful characteristics of program partnerships, characteristics a single program should provide, and the linkages in-between. This paper examines the linkages between these variables and suggests what outreach program administrators should be cognizant of during program development in order to maximize program potential.

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Tierny, Venegas, and De La Rosa (2006) observed, “As society switches to a knowledge-based economy, access to post secondary institutions also rise in importance” (p. 1602). Conley (2005) stated, “The college degree has become much more important for entry into the labor force and continues to be the critical credential for access to graduate schools in the professions” (p. 4). Tierny and Venegas (2009) espoused, “most scholars advise that postsecondary education is necessary for gainful employment” (p. 364). Employers are increasingly seeking college degrees during the screening process when hiring (Adelman, 2006). Further, Long and Riley (2007) argued that:

The monetary rewards of a college degree are so great that many in the field of higher education have begun to categorize the decision to attend college as the million-dollar question because, on average, people with a bachelor’s degree will earn one million more over the course of their lifetimes than those with only a high school diploma. (p.39)

There is a high desire to attend college among high school freshman. As Conley (2005) pointed out, “Close to 90 percent of incoming high school freshmen state that their goal is to go to college” (p. 9).

Higher education literature indicates that education is increasingly becoming more important in an ever-expanding global economy. As such, it is important to examine what research indicates regarding access, information, perception, and barriers surrounding high school graduation and college entrance and success for underrepresented first-generation / low-income students. Hauptman (2007) pointed this out when he stated, “an examination of available data also indicates that concerns about

levels of student readiness, access, and success are particularly acute for low-income and minority students” (p. 4). Low family income, a lack of academic preparation, inaccurate information, and misperceptions surrounding college affordability are major barriers for first-generation / low-income students in regards to college entrance, persistence, and graduation (Chen & Dejardins, 2007; Conley, 2005; De La Rosa, 2006; Horn & Nunez, 2000; Long & Riley, 2007; McDonough & Calderone, 2006). McSwain and Davis (2007) argued, “college prices have risen more rapidly than the rate of inflation since the early 1980’s, placing a disproportionate burden on families with the lowest incomes” (p. 8).

Tinto (1982) stated, “It seems self-evident that finances can be critically important to individual higher educational careers, but their effect on dropout can be long-term or short-term and direct or indirect in nature” (p. 689). Short-term financial need changes may disproportionately affect college students from low-income families. This can lead to dropout, especially in the first year of college when there has been very little perceived investment by students (Tinto, 1982).

Financial aid policy itself can become a barrier for low-income students.

Hauptman (2007) argued:

Institutional aid packaging practices increasingly contribute to a declining degree of targeting toward economically disadvantaged students. This lack of targeting reinforces chronic inequities at each stage of the educational pipeline. (p. ix)

Therefore, systemic policy put in place can often exacerbate the financial struggles of first-generation / low-income students. The following section will provide a discussion

related to the issues outlined above. Although the literature indicates interdependencies between barriers, each barrier will be discussed separately and then summarize the interdependency between barriers.

Low Socioeconomic Status

Long and Riley (2007) conducted a meta-analysis of related literature surrounding financial aid and college access. They found, “Among high school graduates in 2004, only 43 percent of students from families who made less than \$30,000 immediately entered a post secondary education. In contrast, 75 percent of students from families who made more than 50,000 did so” (Long & Riley, 2007, p. 40). When Long and Riley took into account academic preparation they found that a large inequality gap remained. The top academic quartile of low-income high school graduates entered college at roughly the same rate as the bottom quartile of high-income high school graduates.

These researchers found high-income high school students that entered college graduated at a rate of 81 percent within five years of entrance. In contrast only 36 percent of low-income students graduated within eight years (Adelman, 2006; Long & Riley, 2007). In addition, the top 25 percent of low-income students that entered college were far less likely to persist and graduate than their high-income counterparts.

Hauptman (2007) in conjunction with the Western Interstate Commission for Higher Education (WICHE) and the Lumina Foundation published a report based on a meta-analysis year of study addressing why the United States has been more successful in creating college access than student readiness and success and why there are large equity gaps in postsecondary education. In regards to equity gaps in postsecondary education

Hauptman argued, “low tuition policies at public institutions do not do a good job of targeting state subsidies toward the lowest-income students. Nor are most student aid programs at the federal and state levels well targeted to the poor” (2007, p. ix). The result is institutional inequity based on socio-economic status at every level throughout the educational system.

Hauptman (2007) noted that in nearly four decades since equity of access became an underlying theme in policy implementation, the gap between the rich and poor has not narrowed. Hauptman indicated, “even when ability level differences are taken into account, socioeconomic status remains a key predictor of student access” (2007, p. 4). Hauptman argued one of the reasons for this is that “merit based admissions policies tend to favor better-prepared students, who come most frequently from better more affluent high schools” (2007, p.6). As a result, middle and upper income students gravitate to schools with relatively low-tuition costs in order to maximize the benefit for their respective costs. In such cases there is often poor alignment between subsidies and assistance towards the neediest students via policy or institutional practices.

Chen and DesJardins (2008) conducted a meta-analysis related to financial aid and dropout rates across varying parental income levels and found a dropout gap across income level groups that affect low-income students. In order to understand this phenomenon they examined different types of financial aid and parental income to ascertain if different types of aid may lead to a reduction in the dropout gap. They concluded existing theoretical frameworks failed to consider the temporal dimension or timing of aid, and various aid impacts on dropout by income level.

Chen and DesJardins (2008) analyzed the Beginning Postsecondary Students survey of 6,733 students who started their postsecondary education during the 1995-1996 academic year. The survey contained annual information about social and academic integration, dropout rates, and financial aid. For the purposes of the study, only students at four-year institutions were included. The researchers categorized variables into nine groupings then into five constructs including student background, educational aspirations, academic and social integration, institutional characteristics, and financial aid. Chen and DesJardins studied the interaction effect between parental income level and financial aid to determine if there was a correlation between financial aid effects and income group.

Their research findings indicated that lower-income students drop out at a higher rate than upper income students do. “About 38% of low-income students dropped out of institutions without returning during the observation period, whereas the percentages of drop out for middle income and high-income are 31 and 22%, respectively” (Chen & DeJardins, 2008, p. 10). When analyzed closely they found that the high-risk portion of this group was more likely to be females with low GPAs that had parents with low education levels as well as low educational aspiration levels. This indicates that students that have parents with little education and parents that do not expect their children to go to college are less likely to go to college.

Chen and DeJardins (2008) found a direct negative correlation between dropout rates and parental income. Dropout rates for high-income students were only roughly 61.1% of that of low-income students. While there was no significant statistical difference in dropout rates between middle and low-income students, parental level of

education significantly affected dropout rates between these two groups. Chen and DeJardins found, “the odds of departure for students whose parent have a bachelor’s degree or above are only 64.3% of departure from those students whose parent completed high school.” (2008, p. 10).

This research indicated several other factors correlated to drop out rates. Students with higher educational aspirations had lower dropout rates. This research indicated a negative correlation between first year GPA’s and dropout rates. Students receiving loans, work-study, and showing higher levels of academic integration were less likely to drop out as well. Finally, examination of types of aid indicated the Pell grant was statistically significant in regards to reducing the dropout gap. Chen and DeJardins (2008) found with other factors controlled work-study and loans did in fact reduce low-income student dropout rates.

In order to make sense of institutional policies that contribute to student success Muraskin and Lee (2004) headed a research study that examined 20 four-year institutions with high low-income student enrollment. Half of the institutions had higher than average graduation rates (HGR) and half had lower than average graduation rates (LGR). Researchers determined low-income enrollment by percentage of Pell grant recipients at each institution. Graduation rates were determined by counting the number of students enrolled full-time and who graduated within six years.

Researchers also analyzed policy to determine if policy differences correlated to student graduation rates. Muraskin and Lee (2004) found systemic differences in resources and student bodies between HGR and LGR institutions. Greater resources at

HGR institutions included more graduate offerings, full-time faculty, educational resources, and better faculty to student ratios. This trend indicated LGR institutions have a more difficult time providing the same education and thus retaining and graduating students (Muraskin & Lee, 2004). However, researchers noted that students at LGR institutions are paying roughly the same out of pocket from those that attend HGR institutions. The reasoning is that although HGR institutions have higher tuition rates, they also provide more grant aid offsetting the higher tuition rate.

Muraskin and Lee (2004) concluded that 12 factors were common among HGR institutions:

1. Intentional academic planning; students followed structured curriculum, were exposed to extensive advising, attended orientation courses, and were subject to academic reviews.
2. Small class size, which allowed for greater interaction and discussion.
3. The provision of personal academic support and advising.
4. A high level of available and accessible full-time faculty.
5. Educational innovation designed to aid student's transition and supply students with extensive tutoring and group study.
6. Offering of developmental education.
7. Geographic isolation leading to the institution becoming the epicenter of student's lives.
8. Mandating freshman students to live in the dorms.

9. Students, faculty, and the community of these institutions came from similar backgrounds and therefore, shared similar values and experiences.
10. Student selectivity in terms of GPA and SAT/ACT. HGR institutions did not intentionally seek low-income students. However, they did seek students with high GPAs and high SAT/ACT scores and therefore sought out students more likely to graduate.
11. Focus towards merit-based financial aid that attracted high achievers.
12. Focus on individual institutional policy directed at retention and graduation rates above national performance levels.

McSwain and Davis (2007) conducted a meta-analysis for the Institute of Higher Education Policy of the working poor, access, and success in post secondary education. They found that although working poor students received financial aid, they did not receive enough to cover the costs of college; therefore, many had unmet need. They also found that working poor students had to juggle time between work, school, and familial obligations and therefore often attended school part-time, which led to even lower levels of financial aid. Another major issue that surfaced during the analysis was the working poor student's high sensitivity to unanticipated fluctuations in daily expenditures such as unforeseen costs. In essence, these students did not have the financial resources that would allow them to accommodate such fluctuations.

McSwain and Davis (2007) pointed out that starting at a community college, being a first-generation student, and long hours of employment are factors negatively correlated to college success. They argued, "because these factors are closely linked to

income, working poor students continue to lag behind their counterparts with higher family incomes in the area of degree completion” (McSwain & Davis, 2007, p. 31).

McSwain and Davis offered several techniques aimed towards closing this gap discussed in the following section.

St. John (2002) noted that, “since 1980 the gap in college participation rates between low-income and high-income students and between minorities and Whites has widened substantially, creating new inequality in college access” (p.1). St. John attributes this widening gap, or as he termed it to the fact that tuition increases have greatly outpaced the real value of federal grant aid disproportionately affecting low-income students net cost of college. St. John’s conclusions were drawn through a meta-analysis he conducted on the National Center of Education Statistics (NCES) 1987 National Postsecondary Aid Survey, as well as numerous studies he read surrounding college access and preparation.

St. John (2002) outlined three critical trends that led to that led to the growth of the inequality gap. The first trend was the relative value of the Pell grant versus the costs of college. The purchasing power of the Pell grant has waned substantially since 1975. St. John (2002) stated, “the net cost after the Pell maximum at the average public four-year college rose from \$2,742 in 1980-81 to \$5034 in 2000-01” (p. 3). The second trend was that although college participation rates have continued to increase since the 1980’s participation rates for whites and high-income students have outpaced that of African American, Hispanic, and low-income students. The final trend was a decline in enrollment in four-year institutions during a time when overall college participation rose.

St. John attributed this to the decline in purchasing power of the Pell leading lower-income students to enroll at community colleges in larger numbers.

Chen and St. John (2011) conducted a multi-level of analysis on how state policy affects student persistence. Chen and St. John (2011) were specifically looking to see:

1. After controlling for student and institutional level factors, how are state-level financial policies associated with persistence overall at student's first institutions?
2. Do the relationships between state and financial policies and first-institution persistence differ by student SES and racial/ethnic background?
(p. 634).

Chen and St. John (2011) utilized the Beginning Postsecondary Students (BPS) database consisting of 6383 beginning postsecondary students from 422 colleges and universities that enrolled in 1996 and followed these students until 2001. They analyzed the national higher education database containing 49 states financial indicators as well.

Several interesting findings resulted from their research. Socio-economic status proved to be a significant factor. Chen and St. John (2011) stated, "even after controlling for all other factors at individual, institutional, and state levels, we found substantial gaps in persistence rates at first-institutions by SES, with high-SES students having 55% higher odds of persisting than their low-SES peers" (p. 652). Chen and St. John found social integration, both high school and initial college GPA's, first-year academic integration, and individual educational aspirations to be significant factors in student persistence at first institutions. Chen and St. John (2011) also found, "institutional

characteristics were found to be linked to student persistence” (p. 653). However, the most important characteristic was the level of selectiveness by the institution. Students that began college in institutions with higher selection standards were less likely to dropout than those that started college in institutions with low selectivity. Finally, the research indicated that state financial aid variables were important factors in understanding student persistence which indicated a need to examine state need aid in proportion to public tuition when examining student persistence (Chen & St. John, 2011).

Another important factor to examine is institutional analysis of aid based on need or merit. Doyle (2010) conducted an analysis that examined, “shifts in institutional responsiveness to both student need and student test scores over the period 1992-2003” (p. 789). Essentially this analysis was designed to determine if institutional priorities for allocating financial aid have shifted over the period studied. To analyze allocations based on need versus merit Doyle used the National Postsecondary Student Aid (NPSA) survey administered to tens of thousands of students over 12 years. The survey gathered student data surrounding institutional characteristics as well as individual student background and financial aid. When Doyle (2010) defined need versus merit he stated, “I posit that any aid that increases as family income goes down can be reasonably be inferred to be need-based, while aid that increases as SAT scores go up can be described as merit-based” (p. 793). Doyle limited his sample to dependent students classified as full-time students. It is of note that Doyle excluded both work study aid and loan aid because less than 4 percent of the students received loan aid and less than 6 percent received work study aid.

Doyle (2010) found that initially at public four-year doctoral institutions there was not a significant difference between high and low-income student aid nor did there exist a significant difference between aid allocated at different SAT score levels. By 2003 aid allocations between high and low-income students did in fact increase, indicating a need-based focus while student aid based on SAT score increased dramatically, indicating that these institutions were shifting towards favoring higher test scores, but were not shifting away from need based-merit along the way. In public four-year non-doctoral institutions there was not a significant difference in high and low-income student aid. However, by 2003 the differences between high and low-income aid was not statistically significant while high verses low SAT score aid was. These numbers indicate a shift towards favoring high test scores, but these institutions were not increasing need-based aid along the way.

Baum (2007) conducted a meta-analysis of college financial aid and its affect on students from varying socio-economic backgrounds. Baum's research included college financial aid at federal, state, and individual institutional levels. Her research indicated a need to address all three areas separately because the financial aid system exacerbated inequality gaps between affluent and non-affluent students and the trend in aid appeared to be widening this gap.

Baum (2007) argued, "the federal government has primary responsibility for furthering equality of opportunity among Americans" (p 16). The main Federal funding contribution for the neediest students is the Pell Grant. Baum indicated that at the time of the study, the average Pell grant award was \$2040 and the maximum award was \$4050.

Baum (2007) argued the, “maximum Pell grant covers slightly more than half as much of the price of a year at a public four-year college as it did 20 years ago” (p. 16).

Another source of aid provided by the federal government comes in the form of tax credits and tax deductions. However, as Baum (2007) noted this type of aid does not target low-income students. In fact, tax credits and subsidies for families that intentionally save for college can help exacerbate inequality gaps. Baum (2007) argued, “because only households that pay taxes are eligible for these subsidies, they miss the very poor entirely, favoring middle- and upper-income families over lower-income families” (p. 16). Baum found that families that earn between \$100,000 and \$160,000 receive over 40 percent of the benefit of tax deductions, while less than 25 percent of the benefit from tuition tax credits and less than 50 percent of the benefit of the tax benefit from deductions go to families that earn less than \$50,000 a year.

Baum (2007) argued that tax credits and tax deductions, although popular with politicians and society, pose several major problems for low-income students. First, there is currently no evidence that either tax credits or tax deductions increase college-going rates. In actuality, it is likely that they only aid students that are already attending college. Another inherent issue of tax credits and tax deductions is that they are essentially reimbursement programs that provide aid in the spring the following year. As a result, these programs are ineffective in helping students that do not initially have the money to attend college. Another problem with these programs is that they only provide money for tuition and do not account for other expenses including room, board, and books that make up the lion share of the costs of attending college. This results in unmet

need for the neediest students. It is important to note that Baum (2007) found great merit in the utilization of the tax system to help subsidize college student cost as long as those students are well informed, earn enough money, and pay enough taxes to successfully claim the benefits. Baum (2007) argued, “in 2005-2006, almost 9 million citizens reduced their tax bills through use of the tuition tax credits and deductions, while fewer than 5.4 million students received Pell Grants” (p. 17).

Baum’s (2007) analysis of state financial aid indicated that many states are moving towards a higher proportion of subsidies and merit based aid. Baum (2007) argued, “this is problematic since grants don’t just go to students with need” (p. 17). Baum argued that institutional subsidies tend to help all students at a particular institution instead of just the students targeted by the institution. This means that awards could be allocated to schools with high low-income enrollment. However, low-income students are usually found in higher concentrations at community colleges where far less subsidies are allocated, thus widening equity gaps. Baum (2007) pointed out that state allocations have also shifted towards merit-based grant aid. This can be problematic as Baum (2007) argued, “because of the eligibility criteria, middle- and upper-income students are more likely than lower-income students to receive these grants” (p. 17).

Baum and McPherson (2011) analyzed student sorting in institutions of higher education. For the purposes of this analysis Baum and McPherson separated sorting into two distinct categories, the Big Sort and the Little Sort. The Big Sort is the process that separates individuals that enter into the military, labor force, community colleges, and four-year public or private institutions. The Little Sort is the process that separates those

students that attend the upper echelon institutions of higher education. Baum and McPherson (2011) note the significance of the Big Sort as, “the one that has a major impact on the lives of many students and on the character of the inequality in American society” (p. 6).

Baum and McPherson (2011) stated that, “only 10 percent of students in the most selective colleges and universities came from the bottom 40 percent of the income distribution” (p. 7). However, this same population produced 12.5 percent of the SAT scores or ACT equivalencies equal to or exceeding 1250. Baum and McPherson posited that upper echelon institutions fail to enroll the number or qualified first-generation/low-income students they should and as such, examined what factors contributed to this phenomena.

Suggestions Directed at Equalizing Income Inequalities

Hauptman’s (2007) report suggested several steps that state and federal institutions might take in order to reduce the access equity gap for postsecondary education. First, states might enhance current merit-based programs by adding a needs based component. Although award allocation to students based on merit would be the focus, students with higher need would receive higher award amounts or subsidies. Hauptman argued that student aid programs based on family financial unmet need often lead to families with more income receiving more aid if they enroll in institutions that are more expensive. Hauptman suggested this equity disparity might be alleviated or reduced if need were measured based on low family income rather than institutional cost minus unmet need.

Another suggestion Hauptman (2007) recommended for increasing access to students from lower-income families would be for the federal government to create financial incentives for institutions to graduate need-based grant recipients. Hauptman argued, “this would then encourage states to explore various ways in which they might encourage their institutions to make greater efforts both to enroll and graduate students from lower-income families” (2007, p. 18). In order for this to work, the eligibility requirements would need to be structured in a manner that rewards institutions for recruiting and graduating low-income students for this particular aid source. It should be noted that Hauptman pointed out this type of aid can be problematic as it may lead to institutions lowering their standards in order to receive federal or state aid dollars. In order to address this Hauptman suggested limiting the size of payments and implementing safeguards in order to insure balance in readiness, access, equity, and retention.

Muraskin and Lee (2004) argued that in institutions serving a high percentage of low-income students, “much of the difference in student outcomes may be due to factors so basic that they are hardly amenable to tweaking institutional policies or practices” (p. 3). However, they did find that large numbers of HGR institutions enrolled freshman in developmental or remedial programs indicating the need for institutional administrators to continue to support such programs or implement such programs if not in place already. Muraskin and Lee also found that many of the HGR institutions were located in small towns with shared values and social cohesion, supporting arguments advocating for

institutions to create outlets for student social integration that can lead to higher persistence and eventually graduation rates.

McSwain and Davis (2007) suggest a number of ways that institutions as well as the federal and state governments can help working poor students. One way to help working poor students would be to provide tax relief. McSwain and Davis suggested making all grant aid tax free, increasing the federal exempt amount for the Pell grant, or allowing for more educational tax credits geared towards room and board or books. Another suggestion was that institutions might offer more support to working poor students in the form of extended night and weekend hours for all student services departments, extended core curriculum offerings outside of normal business hours, and offering extended hours for libraries and computer labs. McSwain and Davis also suggested a nationwide increase in federal grant aid and statewide initiatives surrounding financial aid awareness.

McSwain and Davis (2007) targeted specific changes that would affect individuals on welfare by allowing them to count college class time towards their 20 hour a week work, community service, or vocational class requirement. They also suggested raising childcare allowances when calculating estimated family contributions (EFC) for financial aid to help single parents afford college. McSwain and Davis targeted working poor youth by suggesting a higher annual income level for maximum EFC qualification. In regards to first-generation students McSwain and Davis suggested increasing outreach programs and offering support programs that include mentoring for first-generation / low-

income youth that address study habits and the financial aspects of paying for college while offering emotional support.

St. John (2002) offered up two relatively direct solutions in order to help alleviate inequality. First, the federal government needs to reinvest in the Pell grant in order to increase its real purchasing power back to its 1980 level. Second, states need to increase investment levels in need based aid through outreach programs and need-based grants. St. John argued if these steps are taken then, “there is a greater chance of restoring equal opportunity to a level that existed in the 1970’s” (2002, p. 25).

Chen and St. John (2011) offered three policy related suggestions to help address student persistence. First they suggested that states create funding policy that rewards outcomes that support student persistence. This would entail policy that takes into account the price elasticity between state aid and tuition as it effects persistence. Chen and St. John’s (2011) argued that, “higher tuition without increased grant aid is associated with higher dropout rates” (p. 654). Therefore, policy needs to be written in such a way that state need-based aid is allocated to offset tuition costs.

Second, Chen and St. John suggested that the federal government and accrediting agencies utilize student persistence as part of the accreditation process. Finally, Chen and St. John suggested that the current policy that utilizes high school graduation as measure for state need based grants be reframed in a manner that rewards K-16 success. According to Chen and St. John (2011) state financial aid policies have a direct impact on student persistence:

The idea of maintaining financial mechanisms to ensure access to and persistence in four-year colleges for students from all SES backgrounds should remain a major goal, and we need to adapt strategies for achieving this goal in the new context. (p. 654).

Baum (2007) suggested three basic tenets in restructuring financial aid. First, there is a general need to simplify the system. In order to do this Baum suggested we have fewer separate programs, create more consistency in rules and eligibility, and streamline the entire process. Second, policy should be written in a manner that targets increasing educational opportunities. Baum argued that tax deductions, merit-based aid, and general grants based on test scores probably do not promote greater opportunity. Finally, financial aid should go beyond focusing on admissions to college and focus on academic preparation and persistence. Baum (2007) argued:

While not everyone is interested in going to college and it is not the right course for every individual, financial constraints should not be the deciding factor in who enrolls and who does not. It is not fair that accidents of birth should determine educational opportunities. And it is not efficient for society to be deprived of the potential productivity of individuals who are unable to participate and succeed in higher education because of their limited financial resources. (p. 20)

Another major suggestion was creating systemic streamlined admissions processes across institutions. Baum and McPherson (2011) argued this would work much like the current California institutions where requirements met lead to the possibility of admittance into a category of institutions, but not necessarily an individual

institution. Baum and McPherson argued this might lessen the destructive aspects of the system that can create confusion for students on what requirements may or may not transfer.

Finally, Baum and McPherson (2011) suggested that elite institutions increase the number of students admitted. They argue that as the overall college going population increases so should the overall top ten populations. Baum and McPherson argued that due to recent budget cuts, spending per student at such institutions has declined. They suggested that as the economy improves, instead of increasing spending per student they increase the overall number of students admitted. Baum and McPherson (2011) argued that elite institutions, “would still maintain their positions as the most selective and best-endowed colleges and universities in the country” (p. 11).

The above literature indicated negative correlations between low family income and college success. As Tinto (1975) argued in the 1970’s, “Specifically children from lower status families exhibit higher rates of dropout than do children of higher status families even when intelligence has been taken into account” (p.99). Baum and McPherson (2011) argued, “Indeed, the likelihood that those first-generation or lower-income students who do have a good chance of admission to a selective college or university will even apply is quite low” (p. 7). Although a correlation can be drawn between family income and high school graduation, college entrance, and earning a degree there are other barriers correlated to first-generation / low-income students that can influence student success (American Council on Education, 2001; Baum, 2007; Baum & McPherson, 2011; Conley, 2005; De La Rosa, 2006; Horn & Nunez, 2006; Long

& Riley, 2007; McDonough & Calderone, 2006). One such critical barrier is academic preparation.

Academic Preparation and Student Success

When college bound students attended preparatory schools, administrators took student readiness for granted as students entering college acquired the necessary literacy for college success. However, the population of students seeking college entrance changed drastically from the elite to students from varying socio-economic and cultural backgrounds. During this time, college administrators raised minimum GPA admissions requirements, but failed to provide a consistent definition of what makes a well-prepared student. High school academic curriculum developed by states in the 1990's was based, for the most part, on citizenship and workforce success rather than college success (Conley, 2005). Because high school curriculum is often not a cohesive and well-designed program scaffolding skills in a progression from ninth through twelfth grade, few students will make the connection between the content and intellectual skills necessary to succeed in college. As a result, when these students enter into college they will struggle with a system that assumes that incoming freshman have a specific knowledge base and can think critically (Conley, 2005).

Hauptman (2007) argued, "a series of reports over time suggest that large and possibly growing number of entering college students in the U.S. require remediation or otherwise are not prepared to do college-level work" (p. 2). This can lead to low graduation rates. In the U.S. less than 50 percent of students who enroll in a four-year

institution complete their baccalaureate degree and the degree completion rates for students that begin at a community college are much lower.

Tierney & Venegas (2005) argued:

The level of preparation that students have prior to entering college influences their chances of persistence and success in college. As such, the timing and implementation of many college-going practices such as rigorous academic preparation, appropriate counseling, and access to financial aid information are critical to college preparation.

(p. 11)

Hauptman's (2007) found that because policies have focused on access rather than student success, institutions have neglected the issue of preparation. In fact, it was Hauptman's contention that the focus on increasing access correlated inversely with incentivizing institutions to graduate students. Hauptman argued, "few states require that students be adequately prepared for institutions to receive funds" (2007, p. 5).

Traditionally, states tended not to allocate funds based on any type of success outcomes, whether it was measuring term completion or graduations rates of students receiving aid. Federal aid largely mirrors this philosophy and requires minimal levels of preparation for students to receive aid. This type of policy lends itself to a system that values access over student preparation and success.

However, since the 1990's many states have on some level, "adopted performance-based funding mechanisms that included graduation rates as one of the key indices on which the performance of institutions would be judged" (Hauptman, 2007, p.

10). The intention of these mechanisms is to recompense both students and institutions for success and address the nation's need to better prepare students. It is important to note that student outcome based policies may serve to widen the disparity gap. Research has shown that students from higher-income families graduate at higher levels.

In a study conducted from 1996 to 2002 at the Stanford Institute for Higher Education research known as "The Bridge Project", researchers studied 25 high schools in six states and surveyed over 2000 students and roughly the same number of parents. From those surveyed the findings focused on roughly 450 students in three high schools surrounding Sacramento. Researchers focused on California students because they felt the California system better informed students. Their logic was that if students struggled with academic preparation, perception, and college knowledge within the best informed system, then students in other less informed states would be likely to have difficulties as well (Conley, 2005).

Conley (2005) agreed with Adelman (1999, 2006) when he stated that the, "single most important factor in determining college success is the academic challenge of the courses students take in high school" (p. 38). For mathematics, this means that not only should students take advanced math courses (coursework beyond Algebra II) in high school they should continue math immediately upon entrance into college (Adelman, 1999; Conley, 2005). Students that take advanced math coursework have more than twice the graduation rate of students that do not. Not only is level of math important, but continuity is an important factor in mathematics as well. Students that take math in their

last year of high school and their first semester of college are more successful in college mathematics as well as in sciences such as chemistry and physics (Conley, 2005).

Conley (2005) argued in regards to writing, institutions of higher education have required four years of English in high school for quite some time, but the precise curriculum of those four years has remained somewhat of an enigma and has not necessarily geared students for success in college. Conley suggested that teachers that have earned college degrees in English teach a majority of English classes taught in high school. As a result, these classes often prepare students for college English courses only. This means that college English professors tend to focus on expressive writing, poetry, and specific literature. However, students need preparation for technical writing throughout college where faculty expect critical analyses of a broad array of writing throughout a wide variety of subject material (Conley, 2005).

Due to recent education reforms, Conley (2005) argued that low-level English and math classes removed from the high school curriculum resulted in most high school courses just meeting college admissions standards. However, this does not necessarily mean that these courses prepare students at the necessary level for college success. This systemic flaw then creates a situation resulting in an ownership vacuum for college preparedness (Conley, 2005).

Adelman (1999) conducted a longitudinal study entitled *Answers in a Toolbox* beginning in 1980. This government report followed a national cohort of 8,873 tenth graders until 1993, when they were reached approximately 30 years of age. The study utilized artifacts including student transcripts and test scores coupled with surveys to

determine academic intensity, attendance patterns, and attainment of a bachelor's degree.

Adelman then ran a five step logistic regression on the findings.

Adelman (1999) found that "Of all the components of curriculum intensity and quality, none has such an obvious and powerful relationship to ultimate completion of degrees as the highest level of mathematics one studies in high school" (p. 5). Adelman also found that overall curriculum outweighed test scores and GPA for academic resources brought to college as well as for attainment of a bachelor's degree. Adelman noted, "the impact of a high school curriculum of high academic intensity and quality on degree completion is far more pronounced and positively correlated for African-American and Latino students than any other precollege indicator of academic resources" (1999;3).

In regards to socio-economic status, Adelman (1999) found that academic resources were more highly correlated to bachelor's degree attainment. Adelman also found that advanced placement courses influenced college access and that they were more highly correlated with degree completion at four-year institutes than with access to those institutions. In short, Adelman found that academic preparation had the greatest correlation overall for college access and degree attainment.

Seven years after Adelman (1999) put forth *Answers in a Toolbox* he compiled a follow up study entitled *The Toolbox Revisited*. *The Toolbox Revisited* is a report Adelman (2006) compiled through analyzing the National Centers for Education Statistics (NCES) data that followed a national sample of over 12,000 eighth graders from 1988-2000 and followed only students that graduated high school and attended four-

year intuitions. The study focused on what factors correlated with four-year degree attainment.

Adelman's (2006) major findings from this study mirror the findings in Answers in a Toolbox with a few important differences. Adelman (2006) argued, "the academic intensity of the student's high school curriculum still counts more than anything else in precollegiate history in providing momentum toward completing a bachelor's degree" (p. xviii). Once again, Adelman found the highest level of mathematics above Algebra 2 to be the most important factor for student success in postsecondary education. It is of note that Adelman found schools with high Latino student populations were far less likely to teach trigonometry as part of their curriculum. Adelman (2006) found that college students with less than 20 semester credits after one calendar year were less likely to graduate. Adelman also argued that the belief that first year students drop out in severe numbers is false and that many of these students may swirl (unofficially moving back and forth between institutions of higher education) and tend to pop up again within a calendar year.

In the sample studied there was a positive correlation with degree attainment for students that enrolled in the initial summer program and completed four or more credits, especially for African-American students. Adelman (2006) found that the swirling mentioned earlier negatively correlated to degree attainment. However, formal transfer from community college to a four-year institution positively correlated to degree completion. In regards to academic performance, Adelman found that academic performance in high school is still the strongest indicator of postsecondary success.

However, Adelman found that GPA and class rank became stronger indicators than senior test scores, the opposite of the findings in *Answers in a Toolbox*.

In 2007 Adelman conducted a follow up analysis using the National Education Longitudinal Study (NELS) examining 25,000 eighth grade students nationally, beginning in 1988. The NELS study also included follow-up interviews with school administrators, teachers, and parents as well as data such as test scores, and both high school and college transcripts. Adelman was curious to examine if the United States truly had an access problem as much of the literature indicated.

For the purposes of this study, Adelman (2007) decided to use threshold access because, “definitions of access that include recurrence, convenience, and distribution both diffuse and contaminate the focus of the question” (p. 49). In essence, this meant that access was defined as, “the first time you walked through the door of any accredited postsecondary institution and stayed long enough to generate a transcript record” (Adelman, 2007, p. 49). It is important to note that Adelman did not differentiate access availability between two-year and four-year institutions that nationally have significantly different persistence and graduation rates.

Based on these datum and criteria Adelman (2007) found:

66 percent of students who graduated on-time from high school with a standard diploma entered some kind of postsecondary school directly from high school and another 13 percent entered by their mid-20s, for a total access rate of 79 percent.
(p. 49)

Adelman (2007) found that persistence or participation is a significant problem. To measure this Adelman used 10 credits earned over the first year as benchmark indicator of successful participation. With participation included, the overall number of students that gained access to the overall number of students that earned 10 credits dropped from 79% to 70%. However, the number of low-income students dropped from 69% to 54% respectively. However, when Adelman looked at the students in the top 60% of their class that entered a postsecondary institution, 97% hit the 10 credit benchmark. Based on these findings Adelman (2007) argued, “in short, do we have an access problem? Not really. Do we have a participation problem? Oh Yes!” (p. 51).

Once again, Adelman (2007) found academic preparation to be the leading indicator for student success and persistence. As such, Adelman pointed out a need for colleges, outreach programs, and high schools to work together to increase student literacy and better prepare students for college. Adelman stressed the need for students to be active players throughout their high school education and on into their postsecondary institutions. Adelman (2007) concluded with the argument that, “access is meaningless without that effort” (p. 51).

Due to the concern regarding college preparedness the National Governors Association Center for Best Practices (NGA Center) along with the Council of Chief State School Officers (CCSSO) worked together to create the Common Core Standards through the Common Core State Standards Initiative (CCSSI). The Common Core Standards developed in the summer of 2009 are a set curriculum created with the direct input of experts, school administrators, community members, parents, and teachers to

provide the necessary coursework to help students succeed in college and the workforce upon high school graduation (CCSSI information website, 2012).

Solutions Surrounding Academic Preparation

Hauptman (2007) indicated that, “policies most likely to lead to greater student success relate to programs that seek to improve student preparation” (p.11). As a result, Hauptman suggested increasing funding for at risk-students through early intervention programs such as the State Scholar Initiative (SSI) and the federal Gear Up program. Both programs focus on college preparation. Gear Up seeks to provide extensive mentoring and counseling beginning in middle school, builds university/middle school partnerships, and awards need-based aid upon college entrance. SSI connects students with business leaders to help motivate them to complete a rigorous high school curriculum. To do this, the federal government would need to set up a system that would allocate federal funds to states that created similar programs. The states would then be responsible for allocating said funds to appropriate individuals.

Hauptman’s (2007) final suggestion to help improve student preparation and therefore increase success is remuneration for institutions based on Pell grant recipients retention and success. The line of reasoning behind this is that if institutions are rewarded based on Pell recipients success it would incentivize institutions to better prepare students and improve the efficiency of the Pell grant process by reducing funding to institutions that have low retention and success rates.

Conley’s (2005) findings from the “Bridge Project” research indicated several tactics to address improving first-generation college student awareness in regards to

academic preparation, college success, and admissions testing and financial aid requirements and procedures. The suggestions in the “Bridge Report” indicated that curriculum in high schools might be simplified in order to create a system designed to minimize or illuminate the potential for students to make poor decisions. This would include, but not be limited to, tailoring elective courses towards helping student’s preparedness for college transition and success (Conley, 2005).

Conley (2005) also suggested an emphasis on responsibility of high school administrations in exposing students to admissions and financial aid information, including registration deadlines. Conley suggested administrators set up a system where automatic enrollment takes place for students in PSAT, SAT, PLAN, or ACT tests respectively for each student. Increasing the availability of Advanced Placement testing coupled with this automatic test enrollment might increase the numbers of first-generation / low-income students earning college credit in high school and therefore make those students more college competitive locally and nationally.

Conley’s (2005) findings indicated that counseling and career centers with volunteer staff were successful in helping create centers of access to college knowledge in fiscally challenged areas. Therefore, high schools might build career planning directly into the curriculum based on college search and requirement information and thus open up an avenue for continuous learning surrounding college admissions and success for high school students.

Conley (2005) noted that some states have begun to gravitate towards default type curriculum with automatic student enrollment. These types of curriculums by design

meet their respective higher institutions state admissions requirements. Although many of these programs include an opt-out option, students can only opt-out with parental permission. Part of the opt-out design includes classes of equal difficulty outside of the default curriculum in order to help reduce the fallout that might occur if students perceived classes outside the curriculum as less difficult.

For states that have not moved to a mandatory curriculum, Conley (2005) suggested that middle schools and high schools should work together to create counseling sessions for middle school students. More specifically, faculty and administrators should implement detailed and mapped out class schedules with middle school students to insure that students enroll in the best possible curriculum in order to meet their goals. Along with curriculum mapping, Conley recommended testing of eighth grade students surrounding basic admissions requirements for colleges and provision of the correct answers immediately following the quiz. School faculty might then keep a database tracking student awareness in order to make an informed decision as to whether more support in the form of an advisory class for second semester eighth graders was needed as well.

Findings from Adelman's (2006) research indicated that in order to close the gap between whites and Asians in juxtaposition to Latino's and African Americans, administrators should look at five key factors. First, college administrators need to focus on the number of credits generated in the first year, making sure students complete at least 20 credits within the first calendar year. Second, administrators need to address policy issues of no credit repeats and no penalty withdrawals. Third, administrators need

to add sections of high demand classes to summer sections to encourage student summer enrollment and thus smooth out or better allocate institutional resources by eliminating the need to hire additional faculty during the year to accommodate the otherwise high demand. Fourth, administrators need to institute a policy that encourages no delay of entry. This can help reduce the number of students that wait longer to enter college and are therefore less likely to succeed. Finally, administrators need to make sure schools offer and students complete a rigorous high school curriculum that this research indicated is the single most important factor correlated to successful degree attainment (Adelman, 2006).

Information and Habitus

First-generation/low-income students often lack generalized knowledge surrounding the college system thus creating significant barriers. Tierney and Venegas (2009) stated, “Low-income and first-generation students enter junior high and high school without knowing much about college and are in schools with historically low college-going rates” (p. 371). De La Rosa (2006) argued that national research “demonstrates that financial aid awareness and information does play a role in the college decision process for low-income, 4-year university-qualified students and their parents” (p. 1672). The decision to pursue entrance and transition into college requires specialized knowledge regarding financial aid, admissions, course sequencing, and placement testing information. When discussing the specialized knowledge that allows students successful transition and retention in the college system, Conley (2005) posited that, “the economically well-off are more likely to have this knowledge than working-class families

of families whose children are the first generation to attend college” (p. 22). Tierney and Venegas argued, “Low-income students often experience educational environments in which there is a lack of informed resources” (2009, p. 380). As a result, a lack of social capital can disproportionately affect first-generation /low-income student’s navigation of the system.

The concept of social capital has been on the fringe of the field of sociology for decades, but it was Bourdieu (1983, 1988) and Coleman (1988, 1990) that first linked the idea of social capital to educational attainment and illuminated direct correlations between social capital and educational success. These sociologists argued that different forms of capital, more specifically forms of human and social capital, are main contributing factors for educational attainment. Therefore, a lack of social capital within the educational system or in the family can create a major barrier for first-generation students.

Social capital defined by Bourdieu (1983) is, "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group” (p. 248). Bourdieu adds to this further, defining social capital as, "transforming contingent relations, such as those of neighborhood, the work place, or even kinship, into relationships that are at once necessary and elective implying durable obligations subjectively felt (feelings of gratitude, respect, friendship, etc)" (1983, pp. 249-250).

Coleman (1988) stated, "Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible" (p. S98). Paxton (1999) points out, "the newer concept of Social Capital acknowledges that certain social relations (e.g., dense networks, norms of reciprocity) can also facilitate production in addition, with the introduction of social capital, researchers began to speak of efficiency gains in noneconomic goods" (p. 92). These efficiency gains in noneconomic goods for first-generation / low-income students would include several different benefits. One benefit would be information and knowledge of the procedural components necessary to complete high school and enter into college.

When Bourdieu (1983) discussed his definitions of social capital, he applied it mainly to the inter-workings and relationships of the elite classes as a means to reproduce their positions in a "closed off" community. Closed off community connotes a dichotomous meaning where the tangible, gated community coexists with the intangible values, and goals within the members of the community. The elite are able to close themselves off from the rest of society, through networks of education, income, and social status. A key variable regarding reproduction of social status starts with education. This is evident when the children of the elites are "legacy" candidates and ushered into numerous Ivy League schools, trained for high paying top executive and political positions, thereby reproducing their elite upbringing (Bourdieu, 1983).

First-generation / low-income students do not have the ascribed status that allows for the automatic inclusion in this elite category, putting them at a disadvantage in terms of ease of educational attainment. As a result, the social capital that would result in high

school graduation and college attainment for these students is relatively nonexistent. If Bourdieu (1983) is correct, the social capital created through college graduation could repeat itself for first generation / low income students thus creating a cycle of success for years to come.

Perna (2006) recognized the importance of *habitus*, or the behavioral patterns resulting from an individual's social capital. Based on the premises that rational choice theory is linear and student choice is multi-faceted Perna created a multi-level conceptual framework for researching student behavior. Perna argued, "research does not reveal the extent to which knowledge is a cause, or consequence, of college-related outcomes" (2006, p. 1662). The following proposed solutions section outlines *habitus* and the multi-level conceptual framework as discussed by Perna.

Tierney and Venegas (2009) posited that, "the underlying assumptions of rational choice theory do not entirely explain why teenagers who are college eligible do not apply for college and/or financial aid" (p.365). Much like Perna (2006) Tierney and Venegas found that an array of non-linear factors influence student decision-making and behavior in regards to attending college. Tierney and Venegas stated, "we find it disconcerting that virtually all of the research has neglected to speak with, interview, reflect on, or otherwise address the assumptions, beliefs, and concerns of low-income students" (2009, p. 368). As a result, Tierney and Venegas examined California, Nevada, and Kansas financial aid systems from a *cultural-ecological model perspective* to ascertain if early commitment programs affect college going.

Paulson and St. John (2002) argued that the popularly used Student Development and Change theories were limited and mainly used on middle class traditional-aged students. They found these models to be inadequate because they failed to examine *habitus* and direct linkages to policy. Paulson and St. John argued that because students come from varying backgrounds and frameworks the models used to study student decision-making should examine the, “situated and contextual nature of student choice” (2002, p.195). In order to alleviate these inadequacies they developed *The Financial Nexus Model*.

Research Surrounding Information and Habitus

Conley (2005) found that parents, teachers, and older siblings were the main sources for college information for high school students. Conley argued, “When students are unaware of complex course requirements and sequences, it is easy for them not to take a course they need or not to remain in the sequence, thereby losing the opportunity to be eligible for admission to certain schools” (2005, p.20).

In Long and Riley’s (2009) meta-analysis they made the argument that “While cost and academic preparation are important hurdles for students, the role of information is also substantial in determining college success” (p.42). This can be a potential barrier for first-generation / low-income students as they often lack knowledge regarding the college system. In fact, Long and Riley (2009) argued one of three main barriers for low-income students “is the complexity of the college admissions process and financial aid systems, as well as a lack of accurate information about higher education costs” (p.41).

Tierney and Venegas (2009) studied Nevada, California, and Kansas financial aid incentive systems in the 2004-2005 academic year from a multi-cultural model framework in order to determine if early commitment of financial aid correlated with college-going decisions. Tierney and Venegas reported that, “the simple point is that in three very different states insufficient financial aid is not the only, or in at least California’s case, the major problem. A lack of information and action related to adequate academic preparation is” (2009, p. 379).

This leads to the question of where students find this information? McDonough and Calderone (2006) conducted an analysis of a study that used data from 78 focus groups coupled with 50 individual interviews across 20 high schools in Southern California. Three of the six counties were rural and the other three were urban. The study examined 230 African American and Latino students on track toward college. Along with the 230 students, 63 counselors, and 87 parents (all African American and Latino) participated as well. Researchers collected data on counselors at 14 of the 20 schools and research findings explore counseling, affordability, relative perceptions of money, and loan concerns of African-American and Latino parents. McDonough and Calderone (2006) concluded:

College counselors represent one of the single most important forms of college and financial aid information for lower income children and their families. Yet evidence abounds that a main causal factor for the under enrollment of low-income students in college, and especially minority students, is a lack of

information on college costs and a perceived lack, or uncertainty of financial aid availability. (p. 1704)

Solutions Surrounding Information and Habitus

Perna (2006) stated, “most adults, parents, and students are uninformed or poorly informed about the costs of attending college and the availability of financial aid” (p. 1621). Today fewer and fewer high schools have the resources to provide such information. After an analysis of literature related to college pricing, financial aid, and student behaviors Perna concluded, “research does not reveal the extent to which knowledge is a cause, or a consequence, of college-related outcomes” (2006, p. 1622). In order to rectify this dilemma Perna suggested a multilevel level conceptual model that includes four layers of context for studying the correlations surrounding college knowledge. The four layers include, “habitus; the school and community context; the higher education context; and the broader social, economic, and policy context” (Perna, 2006, p. 1620).

The social and environmental context addresses perceptions of who is responsible for paying for college, between students and the government. The policy context surrounds financial aid criteria, unmet financial aid need, the complexity of the financial aid system, and the systemic emphasis on loans. The higher education context analyzes administrations role in informing students about financial aid. The school and community context takes into account factors such as peer groups, counselors, and available information at student’s respective schools, such as low-income, African American, and Hispanic students higher dependency on school counselors in schools that

often lack adequate resources regarding college. Finally, the habitus context examines student perception based on the societal groups to which they belong; including socio-economic status, race, and culture (Perna, 2006). Due to the varying contexts in which students understand and perceive college as a realistic option, Perna (2006) suggested:

By considering the multiple levels of context that shape individuals' college-related perspectives, decisions, and behaviors, researchers, practitioners, and policy makers will better understand the ways in which to ensure that individuals of different groups appropriately have and use necessary information. (p. 1632)

Other research suggests that policies addressing college preparation programs targeted towards populations traditionally underrepresented might help prepare and inform students. The basic tenet behind this thought process is that these programs may expose students to social and cultural capital, systemic knowledge, and available opportunities (De La Rosa, 2006; Gandara & Moreno, 2002; Tierney & Venegas, 2005).

Tierney and Venegas (2009) like Perna (2006) posited that college a decision-making processes are not linear and that there are different layers of influences that effect students' decisions to go to college. Tierney and Venegas argued:

Students and their families do not think in a linear fashion like a rational choice consumer who gains one piece of information and then decides whether to make a purchase. Student decision-making is much more protean and complex than what rational choice theorists assume. (2009, p. 380)

In order to address multi-layered contexts, they created the *cultural ecological model*. It is Tierney and Venegas' contention that the traditional rational choice framework

neglected to take into account factors that lead to college eligible teenager's choice not to attend college. As a result, Tierney and Venegas argued, "information and preparation for college and financial aid are multifaceted and longitudinal and have the potential to play critical roles in increasing access to postsecondary education" (2009, p. 365).

Therefore, Tierney and Venegas argued that one solution to finding out just what factors effect student choice to attend or not attend college is by using the *cultural ecological model* to eliminate their suggested issues with the traditional rational choice model.

The *cultural* framework includes educational environments, familial environments, community environments, as well as other out of class environments. Working under this framework assumes that college choices by students are the result of a multitude of social factors as well as social players including parents, teachers, counselors, and peers. One of the benefits of this approach is that it works well with a mixed methods approach, allowing researchers to delve into the qualitative aspects that may help identify what factors correlate with student and parent behavior and choice if such correlations were occurring (Tierney & Venegas, 2009).

Other benefits of utilizing the *cultural* framework include teasing out specific choices and influences from students that basic surveys may miss and then directly creating policy change based on those findings. The *cultural* framework also lends itself to research that may allow researchers to glean how a variety of different social factors influence inter-related decisions and actions. Finally, the *cultural* framework may allow researchers to interpret how low-income youth interpret information that lead to better development of informational materials (Tierney & Venegas, 2009).

Tierney and Venegas (2009) posited,

Low-income / first-generation youth frequently do not have the cultural and social capital to understand what is required to acquire economic wealth. They interpret daily life in a manner quite different from their wealthy counterparts. Financial aid is but one of many actions that they must confront, and the benefit of aid frequently appears indirect or even counter to other parts of their social well-being. (p. 382)

As such, students often lack the information necessary to navigate the complex college system and to realize that college may be affordable with the right types of financial aid (Conley, 2005; De La Rosa, 2006; Long & Riley, 2007; McDonough & Calderone, 2006). Long and Riley (2007) argued that, “College attendance is the culmination of a series of steps and benchmarks, and this current landscape is too complex and difficult for many families to decipher and navigate” (p. 41). This systemic challenge can lead to students believing that college is out of reach financially, not taking advantage of fee waiver options, and becoming disenfranchised with the process and giving up entirely. Tierney and Venegas (2009) argued that if students receive support and relevant information surrounding academic preparation and financial aid in timely fashion, “then access to a postsecondary education is likely to rise for low-income youth” (p. 384).

Perceptions

The perception regarding college affordability influences student's decisions on whether or not to attend college (De La Rosa, 2006; Long & Riley, 2007; McDonough & Calderone, 2006). Oftentimes, if students come to believe that they do not have the fiscal resources available to attend college they will give up and not even attempt to apply for financial aid (Conley, 2005; De La Rosa, 2006; Long & Riley, 2007; McDonough & Calderone, 2006). Tierney and Venegas (2009) stated, "Recent research suggests that low-income high school students do not prepare for college because they believe a post-secondary education is expensive and unaffordable" (p. 363). De La Rosa (2006) found that just under half of the low-income students studied did not feel that they deserved to receive financial aid information.

In regards to the perception of affordability for low-income students McDonough & Calderone (2006) stated, "Sometimes a lot of these kids will be eligible for a lot of scholarships, but they're afraid to even apply because they think they're not going to be able to afford it" (p. 1710). The 2001 American Council on Education (ACE) report suggested:

New information from the federal government suggests that an increasing number of low- and moderate-income college students—who likely would qualify for financial assistance—*do not* take advantage of financial aid programs, despite a trend of increased applications for aid among the general student population.

(p. 1)

Horn and Nunez (2000) indicated that first-generation students and their families perceive college affordability and financial aid availability differently than other groups.

Tinto (1975) indicated that factors making up family backgrounds play key roles in college entrance and success. Tinto stated, “The most important of these factors were the quality of relationships within the family and the interest and expectations parents have for their children’s education” (1975, p. 100). Therefore, if first-generation/low income students’ parents have no expectations for their children to go to college, then this can create a motivational barrier. In essence, a parent’s expectation can become as important as the students expectations themselves (Tinto, 1975).

Long and Riley (2007) found that debt aversion is another barrier for low-income students and claimed, “Financial aid administrators report anecdotally that students from traditionally disadvantaged backgrounds often are unwilling to incur substantial debt to attend college”. If students are unwilling to borrow and grant aid and scholarships do not cover college costs, it becomes difficult to find alternative ways to pay for college.

De La Rosa (2006) analyzed the 2004 College Access and Financial Aid survey developed by the Rossier School of Education and the Center for Higher Education Policy Analysis designed to investigate student’s ideas surrounding how to pay for college, whether or not students used college preparation services, and student background information. Researchers distributed the survey to 11th and 12th grade students in seven low-income high schools in the Los Angeles area. Roughly 3,609 surveys were completed, a 52 percent return rate.

While analyzing this data De La Rosa (2006) found that, “parent background was influential in low-income students’ view of their college opportunity and perceptions of financial aid” (p. 1682). Results from the analysis suggested that students whose parents went to high school were much more likely to aspire to go to college. Results also indicated that parental level of education effected student financial aid awareness and parental level of involvement with the financial aid process. Finally, De La Rosa (2006) found that low parental level of education led high school students to perceive college as expensive.

Although this research indicated the importance of parental background, De La Rosa (2006) analysis suggested that students received financial information mainly from counselors, coaches, and teachers. According to De La Rosa this can be problematic because, “1 out of every 5 dependent and 1 out of every 4 independent low-income student failed to take advantage of most government and institutional financial aid programs because they did not submit a Free Application for Federal Student Aid” (2006, p. 1673). De La Rosa argued this was because, “Large public high schools in low-income, urban areas tend to lack systematic communication about college, career plans, and financial aid and typically have one college counselor to serve a student population ranging from 1000 to 5,000” (2006, p. 1671).

To exacerbate this problem, high school counselors that can meet with students often view affordability differently than first-generation / low-income students. McDonough and Calderone’s (2006) research discussed earlier indicated, “The perceptual differences concerning college affordability are an unintended consequence of

differential tastes between middle-income counselors and low-income families” (p.

1703). Sociologist Pierre Bourdieu (1984) labeled this differential perception or taste as *Habitus* and argued:

That objects of knowledge are constructed, not passively recorded, and, contrary to intellectualist idealism, that principle of this construction is the system of structured, structuring dispositions, the *habitus*, which is constituted in practice and is always oriented towards practical functions. (As cited in Calhoun, Gerteis, Moody, Pfaff, & Virk, 2002, p. 276)

Therefore, *habitus* Bourdieu argued, is individual social space that creates positions, dispositions, and practices inextricably linked together. These constructs are used to build social frameworks so that individuals can come to understand their relative positions in the world. Individuals then make life-choices based on their perceptions of their relative positions within a given society. Bourdieu used social class as an example and pointed out how members within a given social class tend to dress alike, make similar consumer choices, and partake in similar leisure activities. These decisions are essentially the action individuals take based on their perceived relationship within society (Bourdieu, 1984; Calhoun, Gerteis, Moody, Pfaff, & Virk, 2002). As a result, individuals internalize their respective *habitus* and come to expect what their options are within society. Essentially, this internal compass influences individual choices regarding familial patterns, careers, and other important life choices not excluding education.

McDonough and Calderone (2006) made connections between *Habitus* and perceptions of college affordability when they argued, “that this deliberative process is

essential to understanding the financial aid and college cost decisions of low-income students and their families” (p. 1704). McDonough and Calderone analyzed the literature surrounding college decision-making for lower income students and found, “To a great extent, educational research on the financial aid and college cost deliberations of low-income students and their families overlooks the ways in which disparate socio-cultural interpretations of money shape college decision making for the lower income children” (2006, p. 1704).

McDonough and Calderone’s (2006) research indicated that counselors felt that parents of African American and Latino students found the language surrounding loans to be confusing. More specifically, there were times when parents did not understand the difference between grants, scholarships, and loans. Even when parents did understand the difference, some counselors found parents to be debt averse as they felt college financing to be a parental responsibility. Counselors also thought parents perceived college loans to be “huge and often insurmountable debt” (p. 1714). Finally, counselors felt that these parents felt that their children would not be able to afford school without borrowing money from the family as well.

Paulson and St. John (2002) argued that a student-choice construct approach is appropriate when examining the student decision-making process. They argued that educational choices are linked to policy, student choices are always contextual and situational, and student-choice patterns are diverse and as a result, studies need to be conducted on diverse groups. In order to address these basic tenants they developed the *The Financial Nexus Model*. Paulson and St. John argued:

the nexus model is uniquely suited for advancing our understanding of diverse patterns of educational choice, how such patterns may be related to differences in social class, and the ways of public policy (e.g., financial policy) can promote and support diversity in higher education. (2002, p. 193)

Using the *The Financial Nexus Model* Paulson and St. John (2002) examined student perspectives surrounding finances during their initial college choice and later during persistence related choices. The rationale behind *The Financial Nexus Model* is that if students perceive low-cost as an important factor when choosing a college then costs are likely to be an important determinant in persistence decisions as well.

The literature indicates that social capital and habitus create individual frameworks that influence student perceptions surrounding college affordability and directly affect students decisions on where if at all to attend post secondary education. These findings are also important because they support the need to conduct research in a manner that includes diverse sets of students and includes a wide range of variables and tests for the relationships between variables.

De La Rosa's (2006) analysis of counselors and low-income students suggests, "that some perceive that college and financial aid-related information is not for them. They also believe that college is too expensive for them to attend, suggesting that this perception alone keeps them from even considering college" (p. 1683). De La Rosa (2006) suggested, "college aspiration and financial aid awareness must be simultaneous in the development of low-income students" (p. 1684). This simultaneous fostering is

necessary because the findings from this analysis suggested perception of the availability of financial aid directly affects low-income student perception of college opportunity.

Interdependency between Barriers

College access issues are becoming increasingly important as some research indicated that equity and accessibility have been declining in America (Astin & Oseguera, 2004; Long & Riley, 2007). Adelman's (1999, 2006, 2007) research indicated a lack of college participation as a contributing factor to this declining equity, but pinpointed access as the main issue for college entrance and success. Astin and Sax's (1998) research indicated that community service participation positively correlated with 10 different academic outcomes including, but not limited to GPA, persistence, and preparation for graduate school. Various researchers indicated that the higher the level of math attained in high school the greater the chance for college attendance, retention, and completion (Adelman, 1999; Conley, 1995; Horn & Nunez, 2000; Long & Riley, 1997). Research indicated inadequate student preparation for college as a major barrier (Conley, 2008; Long & Riley, 2007).

Sociologists (Bourdieu, 1983, 1988; & Coleman, 1988, 1990) pointed out that social capital is an important indicator of academic success. This idea meshed nicely with Tinto's (1975) argument that a lack of adequate social integration into the academic social structure of higher education relates to Durkheim's theory of suicide. Tinto argued that, "presumably lack of integration into the social system of the college will lead to low commitment to that social system and will increase the probability that individuals will decide to leave college and pursue alternative activities" (1975, p. 92). However, Tinto

conceded that Durkheim's model lacked individual characteristics pertaining to student retention tendency necessary to understand student educational persistence in its entirety.

In reference to academic preparation Conley (2005) stated, "Perhaps the key focus in all classes should be life after high school" (p. 9). This not only means supporting student success for high school graduation it means preparing students for whatever endeavors they wish to pursue immediately after high school. For K-12 administrators this means adequately preparing students for college success.

The literature summarized above indicated the necessity of providing students with a wide variety of academic preparation. Students need early access to accurate information about college costs and expectations. According to the literature high school administrators need to prepare students not only for admissions, but also for the many challenges students will face when they arrive at institutions of higher education. Students need to be able to navigate the often difficult and confusing financial aid systems embedded in institutions of higher education. Students must be fluid in the academic literacy's necessary to succeed in college level English and math coursework. Students also need integrating into the institutional social structures in a variety of ways whether through employment on campus, campus housing, or engagement in campus clubs and organizations (Adelman, 1999, 2006, 2007; Astin & Sax, 1998; Bourdieu, 1983, 1988; Coleman, 1988, 1990; Conley, 2005; Long & Riley, 2007; Riley, 1997; Tinto, 1975). The literature points to better preparing students as Conley (2005) stated, "The time has come to think past admission to academic success" (p. 5). One way to

better prepare and inform first-generation /low-income students is through outreach programs.

Outreach Programs

According to Fenske, Geranios, Keller, and Moore (1997), phenomenal growth in early intervention and academic outreach programs began in the early 1980's. Early intervention programs include public and private agencies that provide an array of services to low-income or at risk students. Common services include provision of information, tutoring, mentoring, and financial assistance. At the center of early intervention programs is the assumption that such programs increase graduation rates and college going levels for program participants. Fenske et al., (1997) stated, "Academic outreach programs that originate in schools, colleges, and universities are a subset of the broader concept of early intervention. Academic outreach programs are differentiated from early intervention programs in that academic outreach programs are operated by academic institutions" (p. 2). Fenske et al. (1997) noted this specific distinction because it sheds light on how faculty and program administrators may influence such programs.

Although academic outreach programs and early intervention programs often share the goal of high school graduation, academic outreach programs focus on preparation and planning for college and usually do not specify a particular academic discipline. However, a few academic outreach programs actually do encourage students to enter a particular field of study and therefore create a symbiotic relationship benefitting both the student and the institution of higher education (Fenske et al. 1997).

Fenske et al. (2007) categorized early intervention programs into six distinct categories:

1. Programs established by philanthropic agencies
2. Federally supported programs
3. State-sponsored programs with matching federal support
4. Entirely state-sponsored programs
5. System changes involving school-college collaboration
6. College- or university-sponsored programs.

Fenske et al. (1997) argued these early intervention programs are often uncoordinated and duplicative and as a result may not provide all of the services necessary to be effective. To address the redundancy issues they suggested program administrators develop bonds between higher education institutions, schools, and the community to insure the provision of services needed for underrepresented students to graduate high school, enter, and succeed in college.

Partnership Characteristics Between K-12 Schools and Postsecondary Institutions

Laguardia (1998) conducted a study to determine what characteristics developed between K-12 schools and postsecondary institutions were successful in promoting academic preparation, college enrollment, and retention for underrepresented students. The study was based on partnerships that met the following program criteria: existence for five or more years, were deemed successful enough to be studied, strove to improve academic performance, targeted underrepresented students, supported college students regardless of choice of major, targeted increased college enrollment and success, and

involved collaborating between varying levels of education. As a result 21 such partnerships were identified and 48 surveys were administered to various program administrators and yielded a return of 40 surveys.

Survey findings indicated that contracts between institutional partnerships were present in 82% of the programs. Nearly 95% of the programs employed a coordinator to act as a liaison between institutions, and a committee governed 77% of the programs. Participants reported institutional collaboration and leadership as the most influential factors contributing to the formation of partnerships. Nearly half of the respondents surveyed viewed collaboration as the most important factor and roughly 40 percent indicated an individual leader as the most significant contributor to partnership development (Laguardia, 1998).

Results indicated that improved college preparation, professional relations between institutions, and increased college enrollment were largely reported as successfully met by partnership programs. However, Laguardia (1998) stated, “college retention was deemed to have been achieved substantially by only 22 percent of the respondents” (p. 176). The majority of programs utilized GPA’s, high school graduation rates, college preparatory course enrollments, SAT scores, and college enrollments as factors in successful outcomes. However, less than half of respondents reported partnership programs collected college graduation data (Laguardia, 1998).

Components Outreach Programs Implement: What is Successful?

Perna (2002) conducted a study to determine which existing outreach programs contained the variety of components necessary to properly service underrepresented

students. Perna examined the 1999-2000 National Service Outreach Programs survey (NSOP) conducted by the National Center for Education (NCES) intended to supply in-depth information regarding existing outreach programs. Research yielded responses from all 50 states, as well as Guam, Micronesia, and Puerto Rico. Data was collected from 1,110 programs. Of the 1,110 programs, only 735 targeted historically underrepresented students and 751 were targeted towards first-generation students.

To analyze the data, Perna (2002) utilized a three-stage model proposed by Hossler and Gallagher (1987). The first stage is predisposition, the initial student choice of college over technical school, work, or some other life choice. The second stage, search, describes students research of various postsecondary options to make an informed decision about what college or university they desire to attend. The third stage is choice, the phase when students review the institutions that accepted them and make a choice based on rankings and decide on which to attend.

Perna (2002) stated the reason for utilizing the three-stage approach was:

Few studies have examined the extent to which existing precollege outreach programs include the elements that have been identified in previous research in each of the three stages of the process. This study was designed to identify the characteristics of precollege programs that target groups of students that have been historically underrepresented in higher education and to compare the characteristics of these programs with what is known from prior research about the predictors of college enrollment. (p. 66)

In regards to predisposition towards college, Perna (2002) found that most programs found fostering an interest in attending college important. Although the first stage of predisposition was high, programs emphasis on college completion was relatively low. This can be problematic because student expectation correlates with goal realization. The research indicated that more than 80% of these programs utilized role models to develop educational expectations with students. Another method utilized was targeting specific groups. Roughly 40% of the programs targeted specialized groups including first-generation, historically underrepresented, and low-income students. About one third of these programs focused services from a particular school. Perna (2002) noted this is important because, “focusing services on a particular school may be particularly effective given that researchers have found that students are more likely to plan to attend college when their friends also plan to enroll” (p. 70).

For the second stage, “characterized by the process of gathering and processing information about both “college” in general and particular institutions” (Perna, 2002, p. 70). Perna found that 40% of the programs that service first-generation, underrepresented, or low-income students college campuses were the primary program location. Perna (2002) also found precollege programs favored aiding with college enrollment, college fairs, and interaction with college faculty and students while encouraging financial literacy was a relatively low priority.

Perna (2002) examined three factors in regards to the third stage, choice of an institution. Perna argued that a predisposition, academic preparation, and parental encouragement and involvement are three key interrelated components of institutional

choice. Perna (2002) pointed out, “only about one fourth of programs that target low-income students underrepresented minorities, and first-generation students provide accelerated courses below the college level or college-level courses” (p. 72). Perna noted this may be a possible program weak point as research indicated that high school curriculum is one of the most important factors in high school graduation and college success (Adelman, 1999, 2006, 2007; Conley, 2005).

Perna (2002) pointed out that research indicated that parental engagement and expectation correlate to predisposition and college enrollment. Perna’s own research indicated that roughly three out of four programs in the study include a parental component. The services most frequently offered included college awareness, financial aid counseling, and parental participation in student activities. Many programs require parents to sign a commitment contract and provide family financial information before formal acceptance of a student in the program. However, Perna (2002) found, “coordination with parents is the most frequently reported problem area or area of need for programs that target low-income students, historically underrepresented minorities, and first-generation students” (P. 75).

Perna (2002) pointed out the importance of providing college information to students early in the educational pipeline. Perna (2002) stated, “only about one third of programs targeted at low-income students, historically represented minorities, and potential first-generation college students first enroll students before the eighth grade” (p. 75). This is a potential program weakness because starting program participants too late can negatively affect program outcomes.

In summary Perna (2002) reported, “only a fraction of these programs, however, appear to contain components aimed at addressing the most critical aspects of the college enrollment process” (p. 80). Perna (2002) found that many early intervention programs start too late, as research indicated that student engagement should start as early the sixth and seventh grades to be effective. Perna (2002) also found that despite the documented importance of academic rigor in high school, “encouraging rigorous course-taking is among the least frequently reported goals of precollege outreach programs” (p. 80). As such, program administrators need to examine and implement program components that address all of the barriers to college entrance discussed above.

Engle, Bermejo, and O’Brian (2006) conducted a study developed to study first-generation student perception of what program components influenced their college enrollment. Research participants included focus groups of 135 first-generation Texan students. Student participants included Trio Talent Search, and Upward Bound supported program alumni enrolled in institutions of higher education at the time of the survey. Engle et al. (2006) stated the focus groups specifically targeted, “aspirations and encouragement to go to college; academic preparation for college, college knowledge about how to apply to and pay for college, and academic, social, and cultural transitions to college” (p. 11). Engle et al. also attempted to interview 10-15 TRiO alumni that although graduated high school and were college prepared chose not to attend a postsecondary institution, but were unable to reach these alumni. Lastly, focus groups were conducted on various TRiO administrators and staff and interviews were conducted with two Talent Search and Upward bound administrators.

In regards to raising students' college aspirations Engle et al. (2006) found that personal, interactive, and persistent outreach made an impact on college interest and preparedness. Engle et al. (2006) stated, "according to students, the earlier the outreach, the more effective it was" (p. 39). Although students did indicate that intervention at the high school junior and senior level still had a significant impact, they indicated that earlier intervention was better. Students also indicated that precollege program staff were valuable resources surrounding college knowledge. Staff provided ongoing information and support to both high school student and their parents. In essence, staff provided the information the students parents were unable to and helped students find the necessary resources to gain admission into college.

Engle et al. (2006) stated that, "academic services offered by precollege programs—such as tutoring and college preparatory courses---did help to mitigate (although not eliminate) gaps in students' academic preparation for college" (p. 40). However, many students were largely unsuccessful during their first semester in college due to a lack of academic support. As a result, students returned to the program staff to overcome their lack of success in the first semester. Although first-generation students struggled academically their first semester they reported that exposure to campus prior to enrollment through workshops, bridge programs, pre-admissions, and campus visits helped prepare them to navigate college, make friends, and manage the balance between academics and social life. This preparation allowed for a much smoother transition into college (Engle et al., 2006).

The research results also indicated that involving the entire family in the transition process from high school to college was essential for first-generation students. More specifically, the focus on developing a long term relationship based on trust with the family led to higher parental comfort levels and support for students desire to go to college. Relationship development with students was a key factor for success as well (Engle et. Al, 2006). Engle et al. (2006) stated students, “emphasized that it was the relationships and trust they developed with program staff that allowed them to be receptive to the support that helped them get into and through college” (p. 40).

Engle et al. (2006) suggested several steps outreach programs can utilize to provide students with the information surrounding how and why to go to college. First, coordinate efforts between federal, state, community, and school based programs. Second, build stronger relationships between college access agendas and precollege programs. Third, schools need to address the counselor to student ratio so high school counselors can provide guidance on the proper pathways to college. Finally, provide more funding for these programs so that they can help other students that might benefit from these services.

Engle et al. (2006) suggested better preparing students for college. First they indicated that high school college preparatory curriculum become the mandatory high school curriculum for everyone. This aligns with Adelman’s (1999, 2006, 2007) and Conley’s (2005) research that indicated a rigorous high school curriculum as a major contributor to college access and success. Engle et al. also suggested increased funding for schools that service high populations of first-generation students, as they are usually

underfunded. Finally, they suggested transcending basic remediation help by providing tutoring and opportunities to take dual enrollment courses, advanced placement, and honors classes.

Engle et al. (2006) found a lack of support once students entered college to be a major barrier. To address this issue they suggested that precollege support programs encourage students to attend institutions that have college support programs in place and that have high student success and retention rates. They also suggested extending existing precollege programs to college campuses. Not only will this create college student support, it might help alleviate the lack of coordination and redundancies Fenske et al. (1997) outlined earlier. Another suggestion was to reduce student participation barriers by offering more flexible hours conducive to life situations such as work hours common for low-income students. Engle et al. suggested programs provide additional financial aid information tailored towards acceptable debt levels and the amount of hours a student should work to promote retention. They also suggested programs place students in campus jobs relative to their individual area of study that might not only help them pay for college, but may promote academics as well.

Academic Outreach Program Development

As discussed above, research indicates that a variety of needs should be addressed to help first-generation / low- income students graduate high school, enter, and succeed in college. These needs include a rigorous academic curriculum, high level math beyond algebra 2, mentoring, information, workshops, parental involvement, social integration, early intervention, continued campus support, and perceptual changes about the

opportunity to go to college (Adelman, 1999, 2006, 2007; Astin & Sax, 1998; Bourdieu, 1983, 1988; Coleman, 1988, 1990; Conley, 2005; Long & Riley, 2007; Riley, 1997; Tinto, 1975). Various researchers offer different ways to meet these needs (Engle, Bermejo, & O'Brian, Fenske, Geranios, Keller, & Moore, 1997; Laguardia 1998; Perna, 2002). The following section links student need and outreach program components.

As Fenske et al. (1997) noted many outreach programs lack coordination between public schools, the community, and institutions of higher education resulting in duplicative processes or programs that fail to meet the entire array of student need. Therefore, it is essential that outreach program administrators build solid partnerships between K-12 and postsecondary institutions to alleviate potential problems. Although building partnerships is critical, the structure of such partnerships is equally as important as the partnerships themselves.

According to Laguardia (1998) successful partnership programs have common characteristics. Successful partnerships employed a single coordinator to act as a liaison between institutions, many of which reported leadership and collaboration as key factors of success in partnership building. Another major factor reported by successful partnerships was that the program utilized an individual leader. Therefore, the development or improvement of an academic outreach program should entail placing one key administrator in place, one coordinator between programs in place, and focus on collaboration between institutions.

Perna (2002) looked at common characteristics of successful outreach programs. First, successful programs were largely university sponsored outreach programs housed

on a university campus. Perna also found that parental involvement and expectation correlated positively to college predisposition and enrollment, but coordination with parents was a problem area for many programs. Perna and as well as Engle et al. (2006) found that early intervention was a key factor both reported by students and inherent in successful programs. Therefore, academic outreach programs should be housed on campus and sponsored by a college. These programs also need to start program participants in sixth grade and include parents in the process from the beginning.

Engle et al. (2006) found that mentoring, college preparatory courses, and tutoring helped close the academic gap for first-generation low-income students. They also found that students reported various exposures on campus helped the transition and social integration to college. Although Perna (2002) found parental involvement was important, Engle et al. found inclusion of the entire family essential in the transition from high school to college. Finally, Engle et al. suggested that programs place students in campus jobs in their area of study to help pay for college and promote academics.

As such, program developers and administrators need to include consistent and constant mentoring starting in the sixth grade. Outreach programs need to include tutoring on campus to aid academics and increase campus exposure. Academic outreach programs should include college bridge coursework and a program location on campus to aid the social integration and transition into college. Outreach programs should develop summer internship opportunities for upcoming college freshman and develop partnerships campus wide to help program participants find student employment upon entering college. Finally, program administrators should not only include parents in

various conferences and workshops, they should include the entire family.

Engle et al. (2006), Laguardia (1998), and Perna (2002) pointed out several key issues with successful outreach programs. First, Laguardia indicated most programs reported they did not collect college graduation data. This oversight is problematic as it can leave programs in the dark as to what might be done to increase college retention and graduation. As such, outreach programs should not only track college graduation rates, but retention rates as well to better inform administrators what program improvements might be made.

Research indicated rigorous course taking was a critical factor for college entrance and success (Adelman 1999, 2006, 2007; Conley 2005). However, Perna (2002) found rigorous course taking as one of the least reported goals of preparation programs. Therefore, not only should outreach programs promote rigorous course taking at every point of contact with participants, they should also include mentoring, conferences, tutoring, workshops, and bridge programs. Outreach programs should also offer advanced coursework during the summer, especially in math, and advanced coursework support during the school year.

Engle et al. (2006) found that many outreach program students were unsuccessful during their first college semester. This was largely due to a lack of academic support on campus, resulting in students returning to their precollege staff during their second semester to seek aid. This trend supports the necessity of a program location on campus and suggests that mentoring continue into the early college years to help alleviate the initial college lack of support.

In summary, college outreach programs need to provide an array of services in order to meet a wide variety of needs that first-generation / low income students have in regards to high school graduation, college entrance, and success. In order to develop programs in the most efficient and effective manner, program administrators need to look at what research indicates students need, as well as what the characteristics and offerings are common in successful programs. Finally, program administrators need to examine what linkages between the two can best help prepare students and reduce the inequality gap in higher education.

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