Intervening Early and Successfully in the Education Pipeline

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Intervening Early and Successfully in the Education Pipeline

by Laura W. Perna and Michelle Asha Cooper

Introduction

As with any major milestone, the 40th anniversary of the enactment of the Higher Education Act of 1965 offers an opportunity to recognize and celebrate important achievements and identify necessary redirections. One area within HEA for both celebration and reconsideration is the federal government’s involvement with early intervention.

One of HEA’s accomplishments is its appreciation that student financial aid is necessary but not sufficient to ensure college access and persistence for low-income students. By providing “early intervention,” several programs authorized under Title IV of HEA recognize that college enrollment and persistence for low-income students are limited not only by financial barriers but also by barriers that are associated with inadequate academic preparation, knowledge of college requirements, costs, and financial aid, and assistance from teachers, counselors, family members, and peers (Perna and Swail 2001). In other words, the federal government authorized early intervention programs in order to provide low-income and first-generation students with the opportunity to develop, early in the education pipeline, the college-related skills, knowledge, aspirations, and preparation that are required for postsecondary enrollment and attainment.

The early intervention and student financial aid programs that are authorized under Title IV of HEA have improved higher education opportunity, but disparities by family income continue. Although college enrollment rates of 18- to 24-year-old high school graduates increased over the past two decades regardless of family income, the current 30 percentage point gap in college enrollment rates between low- and high-income students is comparable to the size of the gap in the 1960s (Gladieux and Swail 1999). Descriptive analyses show that students with low family incomes are less likely than students with high family incomes to expect to graduate from college, take a college entrance examination, apply to a four-year college, and enroll in a four-year college, even when considering only high school graduates who are academically qualified for college (Fitzgerald 2004).

Perhaps in part because of these persisting gaps, some policymakers have questioned the value of continued federal support for early intervention during recent annual appropriations processes. For example, as part of his FY2006 and FY2007 budget, President Bush proposed eliminating federal funding for two TRIO programs (Upward Bound and Talent Search) and GEAR UP (Selingo 2005, 2006). Recognizing the contribution of these programs to college access and persistence for low-income students, both the U.S. Senate and House of
Representatives voted to sustain funding for TRIO and GEAR UP for the 2005-2006 fiscal year (Burd 2005; Field 2005).

A review of the literature supports the wisdom of continued legislative and financial support for early intervention. In anticipation of the 2006 reauthorization of HEA, this paper offers information and recommendations about early intervention. These recommendations are informed by a review of literature describing federally and nonfederally supported early intervention programs, as well as research describing the predictors of college enrollment and persistence more generally.

After providing a brief overview of the federal government’s involvement with early intervention programs, this review describes what is known about the effects of early intervention on college access and persistence. The paper then suggests the central components of early intervention and offers five recommendations: 1) begin early; 2) include a comprehensive set of services; 3) adapt programs to build on cultural strengths of participants; 4) target services toward disadvantaged populations; and 5) involve partnerships between, or collaborations among, various entities including the federal government, state governments, colleges and universities, private foundations, non-profit community organizations, and K-12 schools. The paper argues that, in addition to sustaining financial and legislative support for early intervention, the federal government should also support and encourage rigorous but multi-faceted evaluations of early intervention and ensure the adequacy of need-based financial aid.

**Overview of Federal Involvement with Early Intervention Programs**

The federal government’s involvement with early intervention began in the 1960s with the creation of the TRIO programs. Per the federal regulations, together the TRIO programs are:

- designed to identify qualified individuals from disadvantaged backgrounds, to prepare them for a program of postsecondary education, to provide support services for such students who are pursuing programs of postsecondary education, to motivate and prepare students for doctoral programs, and to train individuals serving or preparing for service in programs and projects so designed. (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998)

Today five TRIO programs are charged with accomplishing this overarching goal. Upward Bound programs are designed to provide eligible individuals between the ages of 13 and 19 with the “skills and motivation” that are required to enroll and persist in postsecondary education. Over 900 Upward Bound and Upward Bound Math/Science programs are in operation across the nation (Council for Opportunity in Education 2005). Talent Search, which serves over 386,000 students, is intended to promote high school completion and postsecondary enrollment among low-income and first-generation college students who are between the ages of 11 and 27 by providing information about college admissions and financial aid (Council for

Whereas TRIO programs offer student-centered early intervention, the federal government also supports school-centered early intervention (Gándara 2001). Authorized under Section 403, Part A, of Title IV under the 1998 amendments to HEA, GEAR UP supersedes the National Early Intervention Scholarship Program (NEISP), which Congress authorized in 1992. While NEISP offered matching grants to state-sponsored programs, GEAR UP offers grants not only to states, but also to partnerships comprised of at least one or more local educational agencies representing at least one elementary and one secondary school, one institution of higher education, and at least two community organizations (e.g., businesses, philanthropic organizations, state agencies, etc.). GEAR UP programs, which serve approximately 1.2 million students, are expected to offer supplemental support services to K-12 students who are academically at-risk, and information to students and parents about college and financial aid benefits and requirements (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-21 et seq., U.S. Department of Education 1998b; U.S. Department of Education 2005).

Impact of Early Intervention Programs on College Access and Persistence

In addition to the federal government, a variety of nonfederal entities (e.g., state governments, private non-profit organizations, foundations, and colleges and universities) also support early intervention (Perna, Fenske, and Swail 2000). These programs generally share a common mission, as most encourage low-income and potential first-generation students to take the steps that are required to enter and succeed in postsecondary education (Perna 2002). Despite the plentitude of early intervention programs, however, relatively little rigorous research examines the effectiveness of early intervention efforts, regardless of sponsor.

Many early intervention programs report that their programs improve such outcomes as college preparatory coursework in high school, high school graduation, postsecondary educational attendance, four-year college enrollment, and college admissions test scores (Cunningham, Redmond, and Merisotis 2003; Gándara 2001). Nonetheless, as others (e.g., Cunningham et al. 2003; Gándara 2001, 2002; Perna 2002) have noted, although many programs state that they
conduct “evaluations,” few “evaluations” assess program impact using rigorous research methodologies, such as a comparison or control group. As a result, some researchers draw conclusions about early intervention based on examinations of programs with limited analytic data (e.g., Gándara 2001) or that have been operating for relatively long periods of time (e.g., Cunningham et al. 2003).

The federal government (U.S. Department of Education 1995) and other researchers (Cunningham et al. 2003; Gándara 2002; Perna 2002) have noted challenges that are associated with conducting research on early intervention. Research is complicated by differences across projects in the population targeted, program goals, services offered, and availability of data tracking participants’ activities and outcomes, as well as variations in the local context of particular programs and the need to track and assess program participants and outcomes over time (Cunningham et al. 2003; U.S. Department of Education 1995). Noting these challenges, the U.S. Department of Education funded a study that did not attempt to evaluate the impact of participation in Talent Search, but that identified the needs of potential first-generation college students, suggested effective program components based on a review of the literature on college enrollment, and recommended measures for monitoring Talent Search Program processes and results.

The best available research on the impact of early intervention for low-income students has been supported by the U.S. Department of Education. The federally-sponsored evaluations of Upward Bound and GEAR UP are longitudinal, with additional data collections and analyses currently in progress (Myers, Olsen, Seftor, Young, and Tuttle 2004; U.S. Department of Education 2002). The most recently completed phase of the Upward Bound evaluation tracks outcomes for individuals through two years out of high school, i.e., through college entry but not through college persistence (Myers et al. 2004). To date, little is known about the effectiveness of GEAR UP, as the first report describes the programs that GEAR UP projects implemented during the first two years of funding, i.e., when students were in the 7th and 8th grades (U.S. Department of Education 2002).

The Upward Bound evaluation suggests that this program has a small but statistically significant impact, especially on four-year college enrollment rates (Myers et al. 2004). Using a longitudinal design with random assignment of applicants to Upward Bound “treatment” and “control” groups, Myers and colleagues (2004) found that Upward Bound participants and non-participants did not differ in terms of total academic coursework completed in high school, high school grade point averages, high school completion rates, postsecondary educational enrollment rates, or credits of postsecondary education completed. However, four-year college enrollment rates were higher for Upward Bound participants than for non-participants (Myers et al. 2004).

The evaluation also shows that participating in Upward Bound is more beneficial for some groups of students than for others. Specifically, Upward Bound is especially beneficial to individuals who had low educational expectations when they applied to the program, those
who were both from low-income families and potential first-generation college students, and Hispanics (Myers et al. 2004). For students with low educational expectations, Upward Bound participation increased the total number of credits completed in high school, the number of honors and Advanced Placement courses completed in high school, four-year college enrollment rates, and the number of credits completed at four-year colleges and universities. Upward Bound also raised four-year college enrollment rates among low-income, first-generation college students, as well as Hispanics. In addition, Hispanic participants completed more credits at four-year colleges and universities—at least through the first two years of college—than Hispanic non-participants (Myers et al. 2004).

Moreover, the longitudinal study of Upward Bound (Myers et al. 2004) may underestimate the program’s benefits. While the evaluation involved random assignment of eligible Upward Bound applicants to treatment and control groups, the design does not take into account the potential selection bias that is associated with being an eligible applicant. In other words, individuals who applied to participate in Upward Bound but were not selected to participate may have been more motivated than individuals who did not apply to engage in behaviors that promote college-related behaviors and to locate external sources of support for these behaviors, regardless of whether they receive the Upward Bound “treatment.” Because this motivation is not considered in the research design, findings from the study may understate the true effects of early intervention programs on student outcomes.

Studies examining one nonfederal early intervention program also suggest that these programs can promote college access and persistence for low-income students (St. John, Musoba, Simmons, and Chung 2002; St. John, Musoba, and Simmons 2003; St. John, Musoba, Simmons, Chung, Schmit, and Peng 2004). Indiana’s 21st Century Scholars program promises to pay the costs of tuition and fees at the state’s public colleges and universities for low-income middle-school students who graduate from high school with a grade point average of 2.0 or higher and enroll full-time in a postsecondary educational institution within two years of graduating from high school. In addition to guaranteeing financial assistance to pay college costs, the 21st Century Scholars program also provides participating students and their parents with a range of support services. Using longitudinal data and multivariate statistical techniques to control for other variables, St. John and colleagues (2002, 2003, 2004) found that, compared with non-participants, Indiana’s 21st Century Scholars program participants were more likely to aspire to complete a bachelor’s degree, apply for financial aid, and enroll in all types of colleges (public two-year, public four-year, private, and out-of-state) within two years of graduating from high school, and program participants were also more likely than non-participants to persist from the first to second semester of their freshman year of college.

Central Components of Early Intervention

While only a small number of studies examine the effects of any participation in early intervention programs on student outcomes, even fewer studies attempt to identify the most effective components of early intervention programs. A review of the literature more generally
suggests that improving college outcomes for low-income students requires addressing academic preparation and achievement, counseling and advising, family support, and financial resources (Perna 2006).

**Academic Preparation and Achievement**

Regardless of income, academic achievement is a critical determinant of college enrollment (Cabrera and LaNasa 2000; Perna 2005b). Research suggests that many early intervention programs include components that are designed to address academic preparation and achievement (Gándara 2001; Perna 2002). For example, the majority (26 of 33) of the early intervention programs that Gándara reviewed included some form of “academic enrichment,” defined broadly to include tutoring, summer or after school academic enrichment programs, accelerated coursework, and preparation for college admissions tests. Perna (2002) found that improving academic skills was a goal of about 90 percent of programs responding to a national survey, although providing rigorous academic preparation was a goal of only about two-thirds of the responding programs. About three-fourths of all programs that targeted low-income students offer study-skills training, two-thirds offer math/science instruction, two-thirds offer reading and writing instruction, one-third offer remedial instruction, one-fourth offer accelerated courses below the college level, and one-fourth offer accelerated courses at the college level (Perna 2002).

Research suggests that improving academic preparation and achievement among low-income students will increase their college access and persistence. Based on her review and synthesis of prior research, Perna (2005b) concluded that academic preparation and achievement are critical to college enrollment, but that average levels of academic preparation and achievement are consistently lower for students from low- than high-income families. Because low-income students often attend schools that have less rigorous curricula, fewer resources, and less qualified teachers, low-income students often do not have access to advanced courses (Pathways to College Network 2004; Perna 2005b). Based on her review of available information about early intervention programs, Gándara (2001) also noted the importance of improving academic preparation, particularly through access to, support for, and completion of rigorous coursework. In a report designed to identify ways to enhance the effectiveness of the Talent Search program, the U.S. Department of Education (1995) argued that improving academic preparation and achievement is required to promote college access and attainment for first-generation students.

**Counseling and Advising**

In a review of effective interventions for first-generation college students, the U.S. Department of Education (1995) identified the importance of counseling, especially counseling focused on providing career and financial aid information. “Counseling,” broadly defined, is one of the most common components of early intervention programs (Cunningham et al. 2003; Gándara 2001; Perna 2002). Gándara (2001) found that 28 of 33 programs had some form of counseling.
including counseling or advising that focused on college, financial aid, careers, and/or personal issues. Perna (2002) found that about three-fourths of all programs that serve low-income students offer academic advising, three-fourths offer career counseling and information, and about two-thirds offer personal counseling.

Research suggests that most students do not receive adequate counseling at the school attended. In its examination of GEAR UP, the U.S. Department of Education (2002) concluded that one-on-one counseling services were not supplementing services that students received through their schools, but were addressing an important unmet need as middle schools typically did not provide sufficient individual counseling. Based on her review and synthesis of prior research, McDonough (2005) concluded that high school counselors can play a central role in encouraging students to aspire to, plan for, and prepare for college enrollment. School counselors can also promote college enrollment by providing parents with information about college and ways to support their children’s educational aspirations, and by ensuring that students are enrolled in college-preparatory courses (McDonough 2005). Nonetheless, the extent to which school counselors can achieve these outcomes is limited by the small number of counselors relative to the number of students at most schools, and the multiple tasks for which counselors are responsible (McDonough 2005). Most counselors allocate less than 70 percent of their time to direct student services (McDonough 2005). In fact, for schools in low-income neighborhoods, school counselors allocate less time to pre-college counseling and more time to personal and crisis counseling (Hawkins and Lautz 2005).

Research suggests that African American students and students with lower incomes are more dependent than other students on high school personnel for college-related knowledge and information (Furstenberg, Cook, Eccles, Elder, and Sameroff 1999; Lareau 1987). The 2004 National Association for College Admissions Counseling (NACAC) Counseling Trends Survey reveals that school counselors are often the primary providers of information about financial aid (Hawkins and Lautz 2005). But 85 percent of counselors from the lowest income schools reported that parents were either “not knowledgeable” or “slightly less knowledgeable than average,” whereas 74 percent of counselors from the highest income schools reported that parents were “slightly more knowledgeable than average” or “very knowledgeable” about financial aid.

Individuals who most likely require college counseling, i.e., students from low-income, minority, and first-generation families, are the least likely to have access to regular one-on-one college counseling through the schools that they attend (McDonough 2005). Teachers are often unable to provide required college-related information, at least in part because of their focus on other priorities, including reducing high school dropout rates and teen pregnancies (Immerwahr 2003), and because they often have low expectations for African American and Hispanic student attainment (Freeman 1997; Immerwahr 2003). Research also shows that African American, Hispanic, and low-income students often lack trust and confidence in counselors because of perceived racist and socioeconomic stereotyping in advising (Gándara and Bial 1999).
Thus, counseling or advising may be an important component of early intervention programs, as low-income and other underrepresented groups of students often receive little college-related guidance from adults (Freeman 1997; Gándara and Bial 1999; Immerwahr 2003; McDonough 2005; Perna 2005b). One exploratory study suggests that Hispanics often make college-related decisions with little input from adults because their parents lack information about college and because the schools the students attend do not provide the necessary information (Immerwahr 2003).

**Family Assistance**

Administrators, as well as researchers and policy analysts, generally believe that “successful” early intervention programs include a “parental” involvement component (Swail and Perna 2000; Tierney 2002). About half (18 of 33) of the programs that Gándara (2001) reviewed included such efforts as inviting parents to participate in orientation or other programs and using parents as program volunteers. According to a 1999 survey, more than two-thirds (70 percent) of college preparation programs that target historically underrepresented minority groups have a parental involvement component, and one-third of all programs require parents of participating students to participate (Perna 2002).

Research suggests the potential benefits of promoting family involvement and support. Parents play a key role in the development of college aspirations and expectations for all students, but particularly low-income students (Hossler and Stage 1992; Hossler, Schmit, and Vesper 1999). Parental involvement is positively associated with both college aspirations and enrollment (Cabrera and La Nasa 2000; Horn 1998; Hossler, Braxton, and Coopersmith 1989; Hossler et al. 1999; Perna 2000; Perna and Titus 2005; Tierney and Auerbach 2005).

Nonetheless, although virtually all parents want to promote their children’s educational attainment, low-income parents often are unable to become involved in their children’s education because of economic, social, and psychological barriers (Perna 2005a). The involvement of families of underserved students may be limited by their lack of familiarity with the culture of the school environment, anxiety towards interacting with teachers and school or program personnel, limited language skills, and distrust of the educational system (Pathways to College Network 2004; Lareau and Horvat 1999). Other barriers to parental involvement may be associated with mother’s employment, parents’ education, family composition, and child care responsibilities, as well as parents’ self-efficacy for involvement (Kerbow and Bernhardt 1993; Tierney and Auerbach 2005). Based on their study of families living in low-income census tracts in Philadelphia, Furstenberg and colleagues observed that, although parents generally believed that their children needed a college education in order to be successful, many low-income parents not only lacked “adequate knowledge of the middle-class world to guide their children in how to succeed,” but also lacked the “resources to subcontract with those who did have that knowledge” (Furstenberg et al. 1999, 226).
Despite the high apparent prevalence of parental involvement components in early intervention programs, Tierney (2002; Tierney and Auerbach 2005) suggests that parents are only superficially involved, likely because programs often lack the time, funding, staffing, and other resources that are required for more substantial involvement. GEAR UP projects are required to have formal parental involvement components, but most of the 20 projects that the U.S. Department of Education (2002) reviewed had low participation in these activities.

While education advocates call for school and community leaders to “help families of underserved students overcome social and cultural hurdles that constrain full participation in their children’s education” (Pathways to College Network 2004, 20), little is known about the most effective ways to promote parental involvement in early intervention programs (Perna and Titus 2005). Tierney and Auerbach (2005) offered several potential strategies for increasing the involvement of low-income and minority families. Their recommendations include informing parents of strategies for helping their children progress along the educational pipeline from elementary school to college, enhancing parents’ perceived self-efficacy for involvement in their children’s education, and encouraging families to gain support from other families for their children’s college-related behaviors.

Financial Resources

Although high college costs and inadequate need-based grant aid restrict college enrollment and persistence even for academically qualified low-income students (Advisory Committee 2002; St. John 2003), relatively few early intervention programs provide financial assistance to students. Only 10 of the 33 programs that Gándara (2001) reviewed included a college scholarship. Perna (2002) found that about one-third of programs that target low-income students offer a scholarship and one-fifth offer tuition or fee reimbursement. Cunningham and colleagues (2003) found that 9 of 17 long-running state-sponsored programs provided participants with financial incentives; for two of these programs, financial incentives were the only program service offered. Student financial assistance for college prices may be a relatively less common component of early intervention efforts because programs may assume that financial aid is available to students through federal, state, and institutional sources, and/or because of the large amount of resources that providing student financial assistance requires.

Although financial assistance for college is relatively less common than other components of early intervention programs, research shows the need to address the financial barriers to college access and persistence. Low family income continues to be a barrier to college enrollment and persistence, as family income is positively related to such outcomes as number of applications submitted, enrollment in either a two-year or four-year institution, enrollment in a four-year institution, and number of years of schooling completed (Ellwood and Kane 2000; Hofferth, Boisjoly, and Duncan 1998; Hurtado et al. 1997; Kane 1999; Perna 2000). Moreover, changes in the costs of attendance have a greater effect on college enrollment for students from low-income families than for students from high-income families (Avery and Hoxby 2004; Heller 1997; Kane 1999; Long 2004).
Research also shows the positive relationship between financial aid and such outcomes as college enrollment and persistence. Research shows that an offer of financial aid is an important predictor of college enrollment among high school graduates (Catsiapis 1987), college applicants (St. John 1991), and high aptitude high school students (Avery and Hoxby 2004), regardless of the type of aid (e.g., grant, loan, work, St. John and Noell 1989). St. John and Chung (2004) found that, compared with non-recipients, recipients of “last dollar” grants through the Gates Millennium Scholars program were 2.74 times more likely to maintain continuous enrollment.

While a small share of programs provide financial aid to offset college tuition and fees, few early intervention programs appear to address the ways in which limited financial resources restrict college-going processes beyond these costs of enrollment. As Gándara (2001) points out, limited financial resources may restrict a student’s ability to pay not only the costs of tuition, fees, and other costs of attendance, but also the costs of behaviors that promote college enrollment, including SAT/ACT preparation courses and registration fees, college application fees, and campus visits. An even larger financial barrier, especially for low-income students, is the cost of foregone earnings while enrolled in college (Kane 1999). One approach to addressing these concerns may be a direct cash stipend to participants. Data from a national survey show that one-third of programs that target low-income students provide participants with some type of cash stipend (Perna 2002).

**Recommended Early Intervention Strategies**

A review of the related literature suggests that “successful” early intervention programs may be characterized by five strategies: 1) begin early in the educational pipeline; 2) include a comprehensive set of services that vary based on a student’s position in the pipeline (Cunningham et al. 2003); 3) adapt services to recognize participants’ cultural strengths; 4) target services toward populations that most need the services; and 5) involve partnerships and/or collaborations among various government, educational, and private entities.

*Begin Early in the Education Pipeline*

Interventions that begin early in the educational pipeline recognize that college enrollment and persistence are the results of processes that begin years before the actual enrollment and persistence decisions are made. Based on their review and synthesis of prior research, Cabrera and La Nasa (2000) concluded that intervention programs should begin to focus on ensuring that students and parents know what is required to become academically qualified to enroll in college when students are in the 6th, 7th, and 8th grades. Nonetheless, data from a national survey suggest that only one-third of programs that target low-income students, historically underrepresented minorities, and potential first-generation college students begin working with students prior to the 8th grade (Perna 2002).
Several studies illustrate the benefits of intervening early. For example, in their longitudinal study of the effects of Upward Bound, Myers et al. (2004) found that, compared with other participants, individuals who participated in Upward Bound for longer periods of time and/or completed the program had higher rates of postsecondary educational enrollment, higher rates of four-year college enrollment, and completed more postsecondary educational credits. Gándara (2001) also concluded, based on her review of available information, that program effectiveness increases with program length.

Intervening early is critical to addressing academic barriers to college enrollment (Bonous-Hammarth and Allen 2005). Lower income students are less likely than other students to be academically prepared for college because of the characteristics of the elementary and secondary schools they typically attend and because of such school practices as curricular tracking and ability grouping (Pathways to College Network 2004; Perna 2005b). In a comprehensive review and synthesis of prior research, Perna (2003, 2005b) found that, compared with other students, low-income students attend schools with fewer resources, as measured by curricular rigor, teacher qualifications, and financial resources relative to student needs. Within a school, students from low-income families are relatively concentrated in lower curricular tracks and lower academic ability groupings (Perna 2005b).

Intervening early is also necessary to address the financial barriers to college enrollment (Bonous-Hammarth and Allen 2005). Based on their examination of Indiana’s 21st Century Scholars program, St. John and colleagues (2002, 2003, 2004) concluded that the promise of the availability of financial aid for college during the 8th grade encouraged students to engage in behaviors that are required to prepare for college. Although the direction of causality is ambiguous, research consistently shows a positive relationship between knowledge and information about college costs and financial aid and such college-related behaviors as college expectations, application, enrollment, and choice, and such college financing strategies as students’ willingness to borrow, students’ use of financial aid, parental saving for college, and student application for financial aid (Perna 2005a). Nonetheless, descriptive analyses show that students and parents only acquire accurate information about college costs and financial aid during the latter years of high school—after they have made critical, and perhaps irreversible, decisions, particularly about their academic preparation (Perna 2005a).

Providing information about financial aid and other aspects of college enrollment early in the college-going pipeline may enable students and parents to engage in necessary behaviors (Perna 2005a). In a report by the American College Testing Service (ACT) on college readiness, the researchers (Wimberly and Noeth 2005) found that many students and their families do not consider finances during their early postsecondary planning. The authors recommend that school administrators, beginning as early as middle school, assist families with understanding and calculating college costs and developing a plan to meet these costs. Likewise, the Advisory Committee (2005) recognized the importance of intervening early to improve students’ and parents’ knowledge of financial aid in its Final Report of the Special Study of Simplification of Need Analysis and Application for Title IV Aid. The first of the Advisory Committee’s ten
recommendations to Congress and the Secretary of Education is to “create a system of early financial aid information” that “would provide middle school students, high school students, and adults with adequate and early information about financial aid, including early estimates of their potential eligibility for aid from multiple sources in the context of college costs” (Advisory Committee 2005, 6).

**Intervene Comprehensively**

In addition to intervening early, programs should also intervene comprehensively (Cabrera and La Nasa 2001). Comprehensive interventions recognize that multiple factors, including inadequate academic preparation and achievement, counseling and advising, family assistance, and financial resources, impede college enrollment and persistence for low-income students. Based on their review of the longest-running state-sponsored programs, Cunningham et al. (2003) concluded that programs with multiple components appeared to be more effective than programs that focused on only one type of service.

Although a review of prior research consistently shows that a number of variables influence college-enrollment and persistence for low-income students (Cunningham et al. 2003; Perna 2005), only a small share of programs offer a comprehensive array of services (Gándara 2001; Perna 2002). Using descriptive data from a national survey, Perna (2002) concluded that only one-fourth of programs targeting low-income students reported having five “critical” components: 1) goal of college attendance, to facilitate student interest in college; 2) college tours, visits, or fairs, to promote aspirations for, and information about, college; 3) goal of promoting rigorous course-taking, to improve academic preparation and achievement; 4) parental involvement, to enhance family assistance and; 5) beginning by the 8th grade, to address academic and financial barriers early enough to promote college enrollment.

**Adapt to Build on Cultural Strengths of Participants**

Programs should adapt to reflect and build on the cultural perspectives of participating students and their families. The most effective programs are likely delivered in a manner that recognizes the importance of cultural integrity and the benefits of cultural differences. Effective interventions may be characterized by attention to recognizing students’ cultural wealth (Tierney and Jun 2001; Villapando and Solorzano 2005). Rather than trying to “fix” students who have cultural values and perspectives that are different from the cultural values and perspectives of the white middle-class, effective early intervention programs likely view cultural differences as assets or strengths (Tierney and Jun 2001; Villapando and Solorzano 2005). This perspective stresses the importance of affirming students’ cultural identities (Villalpando and Solorzano 2005).

Research supports the benefits of tailoring interventions to recognize the culture of participants. For example, Gándara (2001) argued, based on her review of programs, that interventions are more effective when students and program personnel share cultural backgrounds and
perspectives. In their qualitative study, Tierney and Jun (2001) attributed the success of the Neighborhood Academic Initiative in promoting college enrollment of traditionally underrepresented groups of students in Los Angeles to the program’s attention to promoting participants’ cultural integrity. Among other strengths, Tierney and Jun found that the program promoted cultural integrity by affirming participants’ identities, and by viewing participants’ cultural backgrounds as a resource in increasing high achievement rather than as a barrier. Viewing culture as a central characteristic of participants, the program worked to establish connections and involvement not only from students but also from their families, neighborhoods, and schools.

Other researchers note the need to tailor interventions to the cultural perspectives of the target population. For example, Perna (2005c) argues that students and their parents do not have accurate knowledge about financial aid and college costs, not because information is not widely available, but because available information is perceived as inapplicable or is inaccessible. She speculates that the lack of usage of available information may be attributable to one of two factors. First, students and parents may not use available information because they do not consider “college” to be a realistic option, and thus irrelevant to their lives (Perna 2005c). Alternatively, information may be available but not accessible to students and their families because the information presentation does not recognize the users’ native language, technological skills and resources, existing knowledge of higher education, literacy levels, or culture (Perna 2005c).

Target Populations That Most Need Program Services

Current TRIO and GEAR UP regulations recognize that, because resources are limited, they must be targeted to students who most need the services. For example, to receive federal funding through Upward Bound, all participants must be low-income or potential first-generation college students and two-thirds must be both low-income and first-generation. To be eligible for GEAR UP funds, a program must direct services to students attending schools in which at least fifty percent of the student body is eligible for free- or reduced-price lunch (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998b).

Other programs also recognize the importance of targeting resources toward needy populations. Perna (2002) found that three-fourths of programs responding to a survey targeted students from low-income families, two-thirds targeted potential first-generation college students, and two-thirds targeted students from historically underrepresented minority groups. About one-third of all programs targeted students with academic difficulty, defined as those who were at-risk of dropping out of high school and/or low academic ability (Swail and Perna 2002). Targeting programs to the most needy students is critical, given that existing programs serve only a small fraction of those who need such services (Council for Opportunity in Education 2005).
Collaborate with Other Providers

By leveraging resources through collaborations and partnerships with other entities, intervention efforts may be able to serve a greater number of needy students and/or provide needy students with a more comprehensive array of services that begin earlier in the education pipeline. A review of sources of financial support suggests that many interventions are collaborative efforts.

Most programs receive financial support from more than one source, including the federal government, state governments, private organizations and businesses, and colleges and universities (Cunningham et al. 2003). A national survey of early intervention programs revealed that about half of all programs receive financial support from the federal government, one-fourth from state governments, and one-fourth from colleges and universities, and that few programs receive support from only one source (Swail and Perna 2002). Moreover, many programs, including about one-half of TRIO, GEAR UP, and other federally and state supported programs, receive in-kind support from colleges and universities. Community organizations and local K-12 school systems also are important sources of in-kind support (Swail and Perna 2002).

The federal government currently recognizes the importance of coordination and collaboration in the regulations governing the TRIO programs and GEAR UP. The TRIO regulations require that the Secretary of the U.S. Department of Education “encourage coordination” of TRIO programs, “regardless of the funding source of such programs” (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998). The majority of programs awarded GEAR UP grants in 1999 were “partnership” projects (164 of 185, U.S. Department of Education 2002), i.e., projects that require involvement of K-12 educational entities, higher education institutions, and community-based organizations (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998b). No more than half of the costs of GEAR UP partnerships may be funded with federal dollars; at least half of program operating costs must be paid with cash and in-kind contributions from other sources (U.S. Department of Education 2002).

Developing partnerships with multiple entities not only increases the financial resources that are available to support program services, but also has other benefits (Cunningham et al. 2003). Partnerships and collaborations may reduce duplication of efforts, maximize the reach of services, and ensure that needy students receive a comprehensive array of services. Partnerships and collaborations may also increase the likelihood that students receive services across successive educational levels (e.g., from middle to high school), a feature that is absent from many existing interventions (Gándara 2001).

Although they are not without their challenges (Cunningham et al. 2003; U.S. Department of Education 2002), partnerships and collaborations may increase the likelihood that interventions appropriately reflect the characteristics of the state and local context. For example, based on
their examination of long-running state-sponsored interventions, Cunningham and colleagues (2003) concluded that effective efforts included components that were consistent with state and local K-12 curricular reform initiatives, characteristics of state student financial aid programs and policies, and requirements for admission to the state’s public colleges and universities.

Partnerships and collaborations may also improve outcomes of non-participants, as well as program participants. Recognizing that the number of students eligible to participate in early intervention programs—nearly 11 million—far exceeds the capacity of existing intervention programs—approximately 2 million—efforts must be made to link interventions and high school reform efforts (Council for Opportunity in Education 2005; Swail and Perna 2002). Collaborations that involve elementary and secondary schools likely increase the effectiveness of intervention programs for participating low-income students, and strengthen the school curriculum and culture for all low-income students.

Gándara (2001; Gándara and Bial 1999) concluded that, in order to effectively improve academic preparation, early intervention efforts must not merely supplement school activities, but also encourage schools to adopt curricular and cultural reforms that improve academic outcomes for all low-income students. Nonetheless, most early intervention programs aim to improve opportunities for individual students, rather than change the structures within schools that often limit low-income students’ access to college-related academic and informational resources.

The U.S. Department of Education’s (2002) first report on the GEAR UP program, a school-based intervention, suggests that efforts to stimulate school reform are more difficult than efforts to provide supplemental services. For example, the study notes that only one of the 20 GEAR UP projects reviewed was designed to produce substantial changes in the school’s academic curriculum. A small number of the other 19 GEAR UP programs included components intended to supplement the school’s instructional resources, such as enhancements to teacher training, technology, and course offerings. Most GEAR UP programs focus on providing other types of supplemental services to students (U.S. Department of Education 2002).

**More Research Is Needed**

In order to utilize resources in ways that most effectively and efficiently improve college access and persistence for low-income students, the development and implementation of interventions must be guided by research. As described earlier, however, while a small number of studies suggest the benefits of participating in an early intervention program, few studies have examined the effectiveness of particular program components or strategies. Little is also known about how to effectively implement particular components or strategies, such as family involvement. As a result, current knowledge is based largely on what is known about college enrollment and persistence for low-income students more generally.
Rigorous and useful research on interventions should have several characteristics. First, the research should be longitudinal in order to draw conclusions about the extent to which program participation causes a range of college-related outcomes that are realized over time, including increases in high school coursework, high school graduation rates, college enrollment rates, and college graduation rates. Longitudinal research may be especially useful for identifying the types of services that students and their families require at different points in the education pipeline.

Research should also be designed to compare outcomes realized by program participants with outcomes realized by a matched group of non-participants (Gándara 2001). While random assignment of students to intervention treatment and control groups is not possible in most cases, programs must be able to demonstrate the benefits of their efforts for participants relative to non-participants. Research should also examine program cost-effectiveness. Currently, very little is known about the costs of providing early intervention or the relationship between program costs and outcomes (Cunningham et al. 2003; Swail 2005).

A range of methodologies is required to understand the effectiveness of intervention programs and strategies. Given the complexity of these programs, the differences across programs in structures and participants, and the limitations that are inherent in all research studies, no one study is sufficient for understanding the contribution of early intervention programs to college access and persistence for low-income students (Swail 2005). A range of studies is also important given that the implementation, and outcomes, of intervention programs and strategies vary based on the local context of the program and the characteristics of the participants.

Research and evaluation should be a financially-supported component of design and implementation of interventions. At a minimum, programs should document the characteristics of program services and track the duration, intensity, and characteristics of student participation in these services (Gándara 2001; U.S. Department of Education 1995). Such data are required not only to document the effectiveness of interventions in promoting college access and persistence for low-income students, but also to begin to identify which intervention program components are most effective for different groups of students (Gándara 2001). But mandating that programs collect data to measure program costs and outcomes will likely increase administrative costs, thereby reducing the availability of resources available for services (U.S. Department of Education 1995).

**Conclusion**

The 40th anniversary of the Higher Education Act of 1965 provides an ideal opportunity to reflect on HEA’s accomplishments and necessary redirections. Through the establishment and continued support for TRIO and GEAR UP, Congress recognizes that early intervention offers great promise for closing persisting gaps based on family income in college enrollment and attainment. Nonetheless, although existing early intervention programs provide invaluable
services to participating students, the potential benefits of early intervention are not currently maximized.

Early intervention programs are an important tool to accomplishing HEA’s goal of increasing college access and persistence for low-income students. Ensuring adequate funding for early intervention programs should be a federal priority. Programs are expensive to operate, in part because the most effective services are labor-intensive (Gándara 2001). Specifically, the most effective programs appear to be those in which participants have regular interactions with program staff as they progress along the education pipeline from middle school, through high school, and through college (Cunningham et al. 2003).

The level of financial support determines the number of participants, the number of program personnel including instructional and administrative support, the structures for supporting volunteers, the facilities for program activities, the availability of transportation for participants to and from program activities, the number and types of special events and extra services, and the quantity and quality of instructional and advising resources (Swail 2005). Funding cuts, such as those proposed in President Bush’s FY2006 budget, eliminate important services and compromise program effectiveness and integrity, as such cuts likely lead program administrators to make trade-offs between the duration and/or intensity of services and the number of participants (Cunningham et al. 2003).

This review of intervention strategies suggests that the federal government should support interventions that include components that address academic preparation and achievement, counseling and advising, family involvement, and financial resources. The most effective intervention strategies are likely to begin early, include a comprehensive set of services, adapt strategies to reflect the strengths and needs of participants, target services to needy populations, involve partnerships and/or collaborations among relevant entities, and reflect research-based knowledge of effective strategies.

In addition, federal policymakers should also ensure the adequacy of need-based financial aid. Like comprehensive school reform, successful early intervention will increase the demand for higher education, especially among students from lower income families. In order to fully realize the goals of early intervention, however, students must have the financial resources that are required to pay the costs of college attendance and persistence to degree completion. Ethically and morally, Congress cannot, on the one hand, encourage students from low-income families to aspire to, plan for, and become academically prepared for college, but then, on the other hand, fail to ensure that students have the necessary financial resources to realize their dreams. If financial assistance is not sufficient, then initiatives that effectively inform students that the amount of financial aid available to pay college costs is less than actual college expenses may actually discourage low-income students and their families from engaging in behaviors that promote college enrollment.
In conclusion, as we recognize the achievements of HEA, particularly its role in providing early intervention to increase college enrollment and educational attainment, we also call for careful consideration of next steps. Although additional research is required to more completely understand the contributions of early intervention, early intervention clearly offers great promise for reducing persistent gaps in higher education opportunity. We urge Congress to sustain legislative and financial support for early intervention, and increase financial support for research on early intervention programs as well as need-based financial aid.
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