Chapter 1

Improving School-to-Work Transitions: Introduction

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An array of programs, policies, and institutions in the United States attempts to improve the transitions of youths from school to work. These components of the educational system have taken a back seat in the past decade to educational reform focused on measurable academic outcomes, as reflected in the No Child Left Behind Act of 2001 (NCLB). However, a key criterion for assessing educational quality is whether education enhances labor-market success. Although there is a link between test scores and socioeconomic success, it is doubtful that a focus on testing and academic preparation encompasses all of what schools do to prepare students for the world of work. Most notably, perhaps, many students will not attend four-year postsecondary institutions or even attain any postsecondary education, and the implicit or explicit focus on college preparation that is encouraged by a strong emphasis on testing may serve these students particularly poorly. Despite the shift toward test-based reforms, there are still many extant programs, policies, and institutions that seek more directly to improve school-to-work transitions. This book aims to provide up-to-date, high-quality evidence on the effectiveness of these efforts, whom they help, and how they might be improved.

THE SCHOOL-TO-WORK TRANSITION

The school-to-work transition, as reflected in both research and policy discussions, encompasses two segments of the life cycle of young
people. The first is the segment during which students make decisions that shape the links between their schooling and their future career, including both the content of their education and its duration. The second is the segment in which young people leave school and begin to work in the types of jobs that begin to mark the course of their future careers, in contrast to the part-time or part-year jobs in which they sometimes work while in school. These two segments of the life cycle can overlap, and their chronology over the life cycle can vary from person to person.

The school-to-work transition is to a large extent a phenomenon of modern economies in societies with mass schooling in which youths spend many years in general academic education before entering the workplace; the question then arises of how to connect schooling and work. This is not the place for a historical inquiry as to why the school-to-work transition has taken on this particular form. But as documented, for example, in Claudia Goldin and Lawrence Katz (2003), secondary school enrollment rates soared in the first half of the twentieth century (from about 18 percent in 1910 to 71 percent in 1940). Some scholars (for example, Kett 1982) argue that part of the driver for the rise of mass schooling was rapid industrial change at the end of the nineteenth century, which diminished the role of crafts and therefore weakened apprenticeship as an institution for acquiring workplace skills. At the same time, continuing technological change also made it impossible for apprenticeship, even if it had evolved, to provide the numbers of skilled workers needed. It is perhaps not coincidental, then, that the first federal efforts supporting vocational education, the Smith-Hughes Act of 1917, originated in this period.

THE SCHOOL-TO-WORK “PROBLEM”

Despite these earlier developments, however, the identification of the school-to-work transition as a major “problem” to be addressed by policy did not arise until the latter part of the twentieth century. Jacob A. Klerman and Lynn A. Karoly (1995) discuss perspectives aired during the 1980s and 1990s emphasizing the failures occurring in the transition from high school to work (see, for example, Rosenbaum et al. 1990). Government reports described school-
to-work transitions as “chaotic,” entailing unnecessary periods of joblessness and excessive job instability (U.S. General Accounting Office 1990).

These concerns with youths’ unstable attachment to the labor market receive some support from research in labor economics. Drawing on both theory and evidence regarding the human-capital model, this research emphasizes the higher productivity and wages that derive from labor-market experience and job tenure, highlighting the potential costs of time spent churning between many jobs and of repeated spells of nonemployment during the school-to-work transition, as well as the cost of leaving school prematurely (see, for example, Becker 1993; Mincer 1974).

At the same time, the view of school-to-work transitions in this period as problematic can be questioned on two grounds. First, labor economists have noted the potential gains from job search, especially early in the career (Topel and Ward 1992)—a search that may entail moving from job to job and likely experiencing intervening periods of joblessness. Second, Klerman and Karoly (1995) note that the empirical descriptions on which assessments of failure in school-to-work transitions were based may not be accurate. Earlier, Paul Osterman (1980) presented a more nuanced view, suggesting that many youths, prior to settling into quality jobs, initially experience a period of relatively unstable attachment accompanied by many other activities of youths, although some do fail to make a successful transition. Later, though, Osterman and Maria Iannozzi (1993) suggested that the problem of settling down into quality jobs had become more severe for the non-college-bound. Klerman and Karoly’s quantitative work confirms the heterogeneity of school-to-work transitions, while documenting that many youths manage to settle into relatively stable jobs. At the same time, their work also shows that a sizable number of youths do not settle into stable jobs—youths more concentrated among high school dropouts than high school graduates. In chapter 2 of this volume, Deborah Reed, Christopher Jepsen, and Laura E. Hill provide up-to-date evidence on school-to-work transitions and on some of the particular issues that arise in the current context, such as school-to-work transitions among immigrant youth.

The issue of the quality of the job into which an individual settles is an important one—highlighted by growing wage inequality,
and reminding us that the stability or instability of early labor-market attachment is not the sole barometer of the success of school-to-work transitions. The quality of this job may be influenced by the stability of early labor-market experience, as well as the quality and quantity of education and the links between education and the job. Recent research that tries to estimate the consequences of early job stability from exogenous sources of variation in this stability points to net negative effects from job changing early in the career (Neumark 2002), suggesting that even if most individuals do settle into stable jobs, there are costs to the early instability experienced by youths. Educational research has focused more on the links between education and jobs, emphasizing the school-to-work problem from the perspective of weak links between secondary education and the labor market that reduce students’ engagement in school and inhibit transitions into higher-paying (as well as more stable) jobs (see, for example, Hamilton and Hamilton 1999; Hughes, Bailey, and Mechur 2001; Stern et al. 1995).

PROGRAMS, POLICIES, AND INSTITUTIONS ADDRESSING THE SCHOOL-TO-WORK TRANSITION

Policies addressing the school-to-work transition have a long history. As noted earlier, vocational education (later christened “career and technical education”) has been supported by the federal government since the Smith-Hughes Act of 1917. For decades, vocational education was distinguished by its isolation from more comprehensive high school curricula (Hayward and Benson 1993), sometimes reflecting the perspective that vocational education programs served students “better suited to applied than academic learning” (Donahoe and Tienda 1999). In the 1980s and early 1990s, however—concurrent with the emergence of concern over the school-to-work “problem”—dissatisfaction with vocational education crested. As argued by Marie Cohen and Douglas J. Besharov (2002), the dissatisfaction with vocational education was spurred in part by concern over the academic skills of the American workforce—as argued in A Nation at Risk (U.S. Department of Education 1983)—and perceptions that vocational education had become an “educational
backwater” for the disadvantaged and the disabled (U.S. Department of Education 1994).

As a result, the focus of vocational education began to shift toward efforts that integrate academic and vocational skills. A major effort in this direction was the development of an approach called Tech Prep (Ryan 2001), in which some vocational education is introduced into comprehensive high school curricula while vocational education is sequenced during high school with two years of further related study at postsecondary institutions. Tech Prep received a major impetus from the reauthorization, in 1990, of the Carl D. Perkins Applied Technology and Vocational Education Act. In chapter 3, James R. Stone III and Oscar A. Aliaga provide additional information on these policy developments, and present descriptive information on contemporaneous participation in these various types of vocational education (and in school-to-work programs, discussed later).

The second major effort toward integrating academic and vocational skills was the development of “career academies,” “schools within schools” that integrate academics with general job readiness and preparation in a particular career field. Chapter 5, by David Stern, Christopher Wu, Charles Dayton, and Andrew Maul, and chapter 6, by Margaret Terry Orr, Thomas Bailey, Katherine L. Hughes, Gregory S. Kienzl, and Melinda Mechur Karp, provide more information on the development of career academies and present evidence on their effectiveness; these chapters also discuss, in different ways, issues arising in the implementation of the career-academy model in schools.

Where Tech Prep was a specific response to the perception that academic skills had to be bolstered for career- and technical-education students, during the early and mid-1990s a perspective coalesced around more general concerns with school-to-work transitions in the United States, stemming from a lack of connections between school and work for the much larger set of students pursuing comprehensive curricula. Government reports described the existing school-to-work system as producing youths who were “unmotivated in school and spend years bouncing from one low-paying job to another” (U.S. Congress, Office of Technology Assessment 1995, 3). Researchers and others advocated that the United States adopt a more orderly school-to-work system, like
that of the German apprenticeship system or the informal contracts between Japanese schools and employers (Commission on the Skills of the American Workforce 1990; Hamilton 1990; Lerman and Pouncy 1990; Glazer 1993; and other work reviewed in Heckman 1993).

These perspectives provided much of the impetus for the School-to-Work Opportunities Act (STWOA), passed in 1994. This act sought to create an integrated system of youth education, job training, and labor-market information, to provide a faster and more successful transition from school to stable employment. As described in the act, Congress passed the STWOA in response to three areas of particular concern for public education: (1) a lack of connection between school and work that led many youths to be unmotivated in school and to experience subsequent difficulty moving out of low-wage jobs; (2) youths completing school with insufficient skills needed for the labor market; and (3) increasing labor-market demands for complex thinking, close teamwork, and the ability to learn on the job. The STWOA encouraged the development of programs aimed at helping young people develop the skills needed in the workforce and make better connections to careers through school-to-work transition systems.

The STWOA provided $1.5 billion of federal funding to support the development of school-to-work initiatives by the states. The federal funding was intended to serve as seed money to establish school-to-work transition systems that included formal partnerships among secondary and postsecondary institutions and employers. Research has established that in many states the legislation did spur the development of such systems (see, for instance, Hershey, Silverberg, and Haimson 1999; Neumark and Allen 2003; Neumark 2006). For example, a national evaluation by Mathematica Policy Research, a non-partisan research firm, of the implementation of the STWOA (Hershey, Silverberg, and Haimson 1999) documented that by 1997 more than 83 percent of secondary school districts in states with federal STWOA grants had established school-to-work partnerships. However, this evaluation also offered some cautions regarding implementation, and characterized overall progress on the STWOA agenda as “modest” because school-to-work implementation was not seen as “at the core of states’ high-priority education reforms” (1). Moreover, after its initial five years the STWOA was not reauthorized. As a result, funding for school-to-work activ-
ities has in some cases been cut drastically, although many states stepped into the breach with limited funding.\(^7\) The reduced funding has legitimated concerns expressed in the Mathematica evaluation regarding whether states or local partners would continue to fund partnerships if and when federal funding ended.

Although the STWOA has been described as stemming from more general concerns about school-to-work transitions than those addressed by Tech Prep, the school-to-work programs envisioned under the STWOA can in fact be viewed in two ways: as the logical extension of efforts to integrate academic and vocational education for the traditional target audience of those bound for at most two-year degrees; and alternatively as a substantial expansion of the integration of vocational and academic education calling for school-to-work programs for all students. As Cohen and Besharov (2002) point out, both of these themes can be found in the STWOA.

Certainly the STWOA was based in part on concerns about disadvantaged and non-college-bound youths and their problems in achieving a successful school-to-work transition. And school-to-work practitioners and advocates commonly argue that school-to-work programs like those encouraged by the STWOA are especially helpful for the “forgotten half”—the non-college-bound among whom the less-advantaged are concentrated.\(^8\) But the broader target population is reflected in the fact that the STWOA was less restricted to pathways that lead through community or technical colleges, instead making school-to-work available to all students and including paths that lead to four-year colleges and universities. And the STWOA was less explicitly geared toward “underserved populations” such as minorities, women, and the economically disadvantaged. Finally, Cohen and Besharov also note the findings from the national evaluation of the STWOA (Hershey, Silverberg, and Haimson 1999) that, in its implementation, programs targeting the non-college-bound were less common. The chapter I wrote with Donna Rothstein assesses evidence as to whether the types of programs encouraged by the STWOA in fact tend to deliver greater benefits to this “forgotten half.”

Finally, it is important to emphasize that although much of the action surrounding school-to-work occurs in high schools, community colleges and occupational colleges play an important role. (In the case of Tech Prep, of course, the role is explicit and integrated
with high school education.) But as pointed out by W. Norton Grubb (2001), among others, community colleges now play an important role in the workplace preparation of lower-skilled adults, and this is true of occupational colleges in particular. Thus, a comprehensive look at programs, policies, and institutions that address the school-to-work transition should also cover these post-secondary institutions. Chapter 7, by Ann E. Person and James E. Rosenbaum, looks explicitly at what community and occupational colleges do (or should do) to enhance their students’ transitions to the workplace.

**TERMINOLOGY**

It is useful at this point to clarify terminology. My choice of the generic if somewhat circumlocutory phrase “programs, policies, and institutions that address school-to-work transitions” is intentional. I deliberately do not lump all of these under the heading “school-to-work programs.” Not until the STWOA was passed did the phrase “school-to-work program” came into popular use. For example, *The Forgotten Half*, a report issued in 1988, although clearly concerned with issues of transitions from school to work, did not refer to school-to-work programs, but the 1998 report *The Forgotten Half Revisited* uses this phrase in discussing the STWOA (William T. Grant Foundation 1988, 1998). Thus, “school-to-work programs” is too narrow. It does not include career and technical education, and certainly not the community and occupational college efforts at labor-market linkages. In this book, “school-to-work programs” is used to refer to the types of programs encouraged by the STWOA, such as mentoring, internships, apprenticeships, and so forth. The classification of Tech Prep is more ambiguous. It sometimes comes under the label of “school-to-work programs,” because of its classification in government surveys as well as qualitative evidence about what STWOA grantees did, but Tech Prep could also be viewed as distinct, at least from a policy perspective, because it is attributable to the Perkins legislation. Regardless, as the preceding discussion makes clear, efforts to improve school-to-work transitions are broader and include career and technical education more generally as well as the efforts of postsecondary institutions—hence the use
of the more encompassing term to refer to programs, policies, and institutions. The phrase “school-to-work efforts” is sometimes used as shorthand.

In addition, school-to-work efforts sometimes involve encouraging students to get more education prior to entering the workforce. Tech Prep is a prime example of this. Thus, some programs and policies might be thought of as “school-to-school-to-work.” Alternatively, given that the broader goal is to improve youths’ career decision-making, which may often entail further education, some states adopted the label “school-to-career.” In this book “school-to-work” is used as a general term to refer to the entire process of transitioning from school to work, recognizing that there may be multiple schooling “stops” along the way.

OVERVIEW AND CHAPTER CONTENTS

The chapters of this book contribute to our knowledge about programs, policies, and institutions in the United States that seek to improve school-to-work transitions. The book begins with descriptive evidence on school-to-work transitions in recent years, emphasizing differences across demographic and immigrant groups that now represent a large share of the youth population—differences that condition how school-to-work policy efforts might best target different groups. Next, it turns to descriptive evidence on participation of high school students in the various types of programs or curricula that aim to improve school-to-work transitions, to provide a snapshot of this participation after a period of school-to-work-related policy reform in the 1990s.

Chapters 4, 5, and 6 present new research on the effectiveness of the programs that aim to improve school-to-work transitions, how these effects are distributed, and how school-to-work efforts might be improved. These chapters all share a common conceptual framework of estimating the treatment effects of school-to-work programs, although each chapter considers a different angle. Chapter 4 explores whether—as is often asserted—school-to-work programs are particularly effective for the non-college-bound. Chapters 5 and 6 examine the efforts of career academies. Chapter 5 focuses on incorporating information on implementation of the
career-academy model into estimates of the model’s effects and on the potentially symbiotic relationship between studying the impacts of career academies and monitoring and improving their effectiveness. Chapter 6 presents a detailed analysis of the effectiveness of a well-implemented career-academy model.

Chapters 7 and 8 turn to the role of institutions and possible institutional changes that can enhance school-to-work transitions. Chapter 7 moves beyond high school to study community and occupational colleges. It emphasizes labor-market linkages at these institutions—both how these institutions develop such linkages and how they help students. Chapter 8 looks at survey data for one particular labor market, to try to link information on the skills employers are demanding in a local labor market to information on the skills students are supplying, and to find out how students’ skills influence school-to-work transitions. The goal is to highlight, in this particular case, what skills are valued in the labor market, and explore how schools might become better attuned to the skills demanded by employers and do more to provide students with these skills. A common theme in the final two chapters is the importance of information about labor markets in efforts to improve school-to-work transitions, and the implications of this for educational institutions. More detailed summaries of the chapters follow.

**Descriptive Evidence on School-to-Work Transitions**

Deborah Reed, Christopher Jepsen, and Laura Hill document differences in school-to-work transitions across demographic groups and between immigrants and nonimmigrants, which is important given the increased diversity and higher immigrant share among the youth population, and the imperative to think about what types of programs best address the needs of different groups. Their analysis is based on data from the U.S. Census of Population and the National Educational Longitudinal Study (NELS).

Between 1980 and 2000, the share of the population aged thirteen to twenty-four that is native-born white declined from 75 to 61 percent; it is projected to decline to 55 percent by 2020. The African American share has remained fairly constant, but the Hispanic share rose sharply since 1980 to 16 percent in 2000, and
is projected to increase to 22 percent by 2020. The authors document a wide variety of dimensions along which several nonwhite native-born groups have school-to-work transitions that may be viewed as less successful: a higher likelihood of single motherhood or a teen birth (for women); lower likelihood of high school completion; less college education and lower earnings; and a higher share neither working nor in school. The authors also document similar patterns of less successful school-to-work transitions for immigrants from Mexico, and more successful transitions for Asian immigrants.

Reed, Jepsen, and Hill find that differences in family and school characteristics account for many of the racial and ethnic differences in educational attainment and teen fertility, although not as much for successful transitions to work (for those who do not obtain a bachelor's degree). In the case of Mexican immigrants, some of the differences in schooling attainment are attributable to these immigrants coming as teenagers and not enrolling in school in the United States. This evidence suggests that it is important that those who design and evaluate school-to-work programs consider the programs' potentially different impacts on different demographic groups, and perhaps target some groups of minorities as a way of improving later labor-market outcomes for them. This chapter also raises the possibility that for immigrant groups, such as Mexicans, who come for employment but have low school enrollment rates, school-to-work policies might consider focusing on programs to attract youths into schools rather than targeting those already in school. In addition, the large share of Mexican immigrants among youths points to the potential value of including language training in school-to-work efforts.

**Participation in Career and Technical Education and School-to-Work Programs**

Chapter 3, by James Stone III and Oscar Aliaga, in which they use data from the new 1997 National Longitudinal Survey of Youth (NLSY97), provides a rich description of participation in secondary education programs with a career focus. The chapter examines not only school-to-work programs but also career and technical education, which is often viewed as narrower than school-to-work. Career
and technical education is typically defined as course work in a specific occupational or vocational program, whereas school-to-work encompasses a broader set of programs covering career majors, Tech Prep, and a set of school-to-work activities that Stone and Aliaga characterize as “work based,” including job shadowing, cooperative education, workplace mentoring, school-based enterprise programs, and internships and apprenticeships. The authors place the types of activities and concentrations that they study within the broader context of the history of educational policy relating to vocational education, Tech Prep, and school-to-work, elaborating on some of the history outlined earlier. They then use the NLSY97 to provide a picture at the end of a decade of school-to-work-related policy reform of who participates in these various types of programs or curricula.

On the basis of self-reported curriculum concentration, the authors find rather low participation in career and technical education, with about 12.5 percent of high school students identifying themselves as either career and technical education (CTE) concentrators or dual-career (CTE and academic) concentrators, as opposed to academic or general concentrators. In contrast, 32.7 percent of high school students report participation in career majors, and just under one-half report participation in at least one of the specific school-to-work activities just listed, with the largest share in job shadowing. The authors also study the overlap between career and technical education and dual concentration and participation in school-to-work programs, and find that these concentrators are significantly more likely to participate in school-to-work than are general or academic concentrators. Stone and Aliaga document the socioeconomic and demographic differences between those who do and do not participate in the different programs and concentrations, finding that CTE and general concentrators come from lower socioeconomic backgrounds, are more likely to be minorities, and are less well prepared academically. Finally, they note that although the number of CTE concentrators is small, many students take CTE courses, and the number of such courses taken does not differ that much between CTE and other concentrators. Thus, they conclude that CTE has become an important part of the high school experience and raise the concern that the No Child
Left Behind policy’s emphasis on academic course work is likely to come at the expense of school-to-work and CTE.

**School-to-Work and the “Forgotten Half”**

School-to-work advocates and practitioners commonly argue that school-to-work programs are particularly helpful for less-advantaged youths, or the broader group of those who in the absence of any intervention are unlikely to attend college—often termed the “forgotten half.” As noted earlier, this perspective was reflected in the STWOA, which referred specifically to the problems that disadvantaged and minority youths face in making the school-to-work transition. The main goal of chapter 4 is to use the information on school-to-work programs in the NLSY97, described in chapter 3, to examine evidence of the absolute and relative effectiveness of school-to-work programs for the forgotten half—those less likely to attend college. We use an estimated model of college attendance to classify those in the NLSY97 in terms of whether they were more or less likely to attend college, and then to estimate models for the effects of participation in a variety of school-to-work programs on education- and employment-related outcomes, testing for differences in program effects for those less likely to attend college.

The data provide some evidence that school-to-work program participation is particularly advantageous for men in the forgotten half, with respect to both schooling and work-related outcomes. Mentoring and co-op programs increase these men’s postsecondary education, and co-op, school enterprise, and internship and apprenticeship programs boost their employment and decrease idleness after leaving high school. In contrast, there is less evidence of such beneficial effects of these measures for other men, especially on schooling. The evidence that school-to-work programs are particularly beneficial for women in the forgotten half is more limited to work-related outcomes, especially the finding that internship and apprenticeship programs lead to positive earnings effects for these women, measured early in the life cycle. Overall, the evidence suggests that there may be substantial benefits from school-to-work efforts targeted at male high school students whose characteristics and backgrounds make them less likely to attend college, and there may also be labor-market benefits for women in this group.
Chapters 5 and 6 look at career academies, a type of school-to-work program that has had a quite high profile. Career academies are high school programs directed toward a particular broad career area and provide context for some of the academic instruction. They also have work-based components such as internships and other career exploration activities. David Stern, Christopher Wu, Charles Dayton, and Andrew Maul in chapter 5 present two types of analysis. First, they report on how the Career Academy Support Network (CASN) uses transcript data to monitor implementation of career academies and describe some standard evaluation-type results on the effects of these academies. In the more innovative part of the chapter the authors construct measures of career-academy implementation and then try to establish whether the measures are associated with more effective career academies. This is an important effort because there may be a gulf between simply establishing a program and actually implementing an effective one, and in many cases researchers have little or no knowledge about implementation. In addition, of course, understanding how implementation influences the effectiveness of career academies (or other programs) is invaluable to practitioners.

The strongest evidence of the effects of career academies is that participants are more likely to remain in their high schools, although the authors do not know whether those who do not remain in their high school drop out or simply move elsewhere. They also find that academy students have increased attendance, but they find no evidence of improvement in terms of credits earned or reduced disciplinary problems, and they find even a hint of lower grades. The authors are quite frank, however, in pointing to the limitations of these estimates as causal effects, and speculate that the greater “holding power” of academies may depress the observed achievements of academy students, because the academies are more likely to retain poor performers. When the authors try to ask whether implementation is associated with stronger program effects, the answer appears to be no, although they caution that for this analysis the cohort of students in an academy is the unit of observation, effectively, and they have only twenty-two of these in their data set. There is no question that more research along these lines would be extremely useful, and ultimately the contribution of this chapter is likely to be
the impetus for further research incorporating implementation measures into studies of program effectiveness, although this places high demands on researchers.

In chapter 6, Terry Orr, Thomas Bailey, Katherine Hughes, Gregory Kienzl, and Melinda Mechur Karp study the National Academy Foundation’s (NAF) Career Academies. The NAF sponsors hundreds of academies, with funding from industry to support academies in travel and tourism, finance, and information technology. The authors use a sample of career-academy participants in nine programs and a comparison group of nonacademy students from the same schools. This chapter builds nicely on the previous chapter’s concern with implementation of the career-academy model, because the authors focus on academies judged to have fully implemented the NAF career-academy model. In a sense, then, it presents results from what might be considered career academies using “best practices.” The data used in this chapter are from students still in high school; hence the authors can only focus on issues of the high school experiences that are results of the programs, the programs’ effects on students’ engagement and achievement while they are in high school, and their college and career aspirations and plans. This is a limitation because in some sense the litmus test for school-to-work programs is what they deliver in terms of career development.

The evidence indicates, perhaps not surprisingly, that the career academies created a distinct high school experience grounded in career-related courses, summer internships, college-level courses, courses in computer technology, and career-planning activities. More important, participation is associated with participants’ greater engagement with education and the school, such as enjoying school and feeling as though they belong, and their reports that other students encourage them to work hard and do well, although there was no significant effect of participation on attendance or high school grade point average. Finally, career-academy participation is associated with a higher likelihood of planning to go to and being accepted at a four-year college. In relation to the issue of implementation raised in chapter 5 by Stern, Wu, Dayton, and Maul, chapter 6 presents evidence that suggests that a well-implemented career academy can have beneficial effects, although the authors of both chapters point to the value of research that tries to pin down variation in career-academy implementation and the effects of this vari-
ation on outcomes. As Orr, Bailey, Hughes, Kienzl, and Karp suggest, this variation in implementation may help to explain differences in results across various studies of the effects of career academies—something we would clearly like to better understand.

**Two-Year Colleges**

All of the work to this point, and much of the existing research literature, focuses on high schools. As Ann E. Person and James E. Rosenbaum point out in chapter 7, however, linkages between high schools and labor markets are largely regarded as weak, and many students enter postsecondary education instead of entering the labor market directly, nearly half of them at community colleges. Moreover, two-year colleges—especially those that are occupational (that is, they offer accredited associate’s degrees in a range of occupational fields such as health technicians, business, etc.)—face the same challenges as high schools in trying to create effective transitions from school to work. Thus, extending the analysis of school-to-work to postsecondary institutions is of critical importance, as is considering what high schools might learn from the experiences of postsecondary institutions. To this end, Person and Rosenbaum in chapter 7 provide a mixed qualitative and quantitative study of labor-market linkages among faculty at two-year colleges in which they compare seven public community colleges and seven private occupational colleges. The latter are hardly representative, and may instead provide examples of “best practices” at such schools.

The qualitative evidence from interviews with program chairs points to a number of dimensions along which labor-market linkages are taken more seriously at the private occupational colleges than at community colleges, even though the latter take formal responsibilities for labor-market linkages. The authors also conducted a survey of over four thousand students at these colleges by means of which they tried to examine quantitatively whether the teachers’ or the institutions’ labor-market linkages as perceived by students appeared to increase students’ effort or reduce the likelihood of their considering dropping out. They find evidence of these beneficial effects. The quantitative evidence points to the potential benefits of these linkages, and the qualitative evidence indicates perhaps more than anything else how to strengthen these linkages. Among some of the
factors identified by interviewees as aiding in labor-market linkages are part-time and adjunct faculty who have better connections to the field (although this also has some costs), advisory committees with links to local labor markets, and the participation of faculty in professional associations.

**From School to Work: Skills in Entry-Level Jobs**

Nan Maxwell, in chapter 8, uses a unique survey of San Francisco Bay Area workers and employers involved in entry-level jobs to study the extent to which particular sets of skills ease transitions into the labor market by securing both employment and higher wages. She finds that academic skills such as reading and writing, math, and communications are associated with considerably higher employment rates. She also finds that workers with particular skills that are in relatively short supply in this labor market earn higher wages. Of course the latter result is not surprising, but the use of data on both skills supplied by workers and skills demanded by employers provides a unique look at this question.

The research does not address school-to-work programs per se. But it does provide some indirect evidence that building skills among workers who enter the labor market after high school is associated with better school-to-work outcomes, and in particular suggests that it can be quite important to figure out ways to tie the skills that are emphasized in school-to-work programs to those that are in relatively high demand in local labor markets. Interestingly, though, this chapter points to the value of what might be considered a rather general set of skills, encompassing academic skills such as English and math, as well as what some researchers have labeled the “new basic skills” such as communication, problem solving, and the ability to carry out simple tasks on a computer. Of course, this may reflect the fact that this study focuses on what is in some respects the low end of the labor market, requiring no more than a high school education. Nonetheless, it seems to suggest that policy interventions targeting individuals in this group may have the potential to improve their labor-market transitions by encouraging formation of these skills. And it seems likely—although such an assertion is beyond the scope of this chapter—that as workers accumulate more labor market experience the better starts afforded by possession of these skills translate into further gains.
CONCLUSIONS

The conclusions that arise from the combined research presented here should be of interest to researchers, policymakers, and practitioners involved with the programs, policies, and institutions that aim to improve school-to-work transitions in the United States. The key conclusions are as follows:

- Black and Hispanic natives have less successful school-to-work transitions than native whites. There is evidence that school-to-work programs appear to deliver more benefits to the less-advantaged, especially among men, which may also help to explain why students concentrating in career and technical education (CTE) and participating in school-to-work programs are disproportionately members of minorities. These findings suggest that it may be particularly important to target school-to-work efforts toward blacks and Hispanics, but we need to be careful not to foreclose academically oriented educational pathways for these groups.

- Mexican immigrants also have less successful school-to-work transitions than native whites, and many young Mexican immigrants never enroll in school. Together, these results point to the value of trying to deliver school-to-work programs to Mexican immigrants, using venues other than or at least in addition to high schools, and to the potential value of including language training in school-to-work efforts.

- About half of U.S. students participate in school-to-work programs, and many take at least some CTE courses. Consequently, for many students increases in academic course requirements are likely to entail reductions in CTE courses, possibly echoing the overall deemphasis of school-to-work efforts associated with test-based educational reforms.

- Career academies appear to have some beneficial effects on the high school experience, including increased engagement, better attendance, less dropping out, and a higher likelihood of going to a four-year college. There is variation in the implementation of the career academy model across schools, although as-yet-crude measurements of implementation do not seem to be associated with the effects of career academies. On the other hand,
the evidence of beneficial effects on the high school experience and higher education plans comes from academies that appear to have strong implementation.

- Linkages between faculty and the labor market at two-year colleges increase the effort reported by students and decrease consideration of dropping out of educational programs. Private occupational colleges may be particularly good at encouraging and developing these linkages, in part via labor-market contacts among faculty members. Community colleges could likely provide a benefit to their students by emulating these efforts.

- Survey evidence on a key target audience of school-to-work efforts, those entering the labor market immediately after high school, points to the importance of skills for securing employment and a higher wage. That said, the most important skills appear to be “new basic skills” such as communication, problem solving, and the ability to carry out simple tasks on a computer, rather than specific workplace skills. Although these skills are relatively general, the academic emphasis of high school curricula may not emphasize these skills sufficiently. More generally, institutional efforts to create a flow of information to high schools about the skills needed in the labor market their students are likely to enter would most likely parallel the evidence from private occupational colleges and enhance the effectiveness of school-to-work programs.

All in all, these conclusions point to some potential benefits of programs, policies, and institutions aimed at improving school-to-work transitions of youths in the United States, and suggest that we should be cautious about educational policies that focus exclusively on test scores and academic preparation. At the same time, these conclusions point to some continuing and some new challenges, including adapting school-to-work efforts to help young immigrants; using school-to-work efforts to boost socioeconomic outcomes among minorities and the less-advantaged more generally, while avoiding the creation of a dual system of education that discourages the pursuit of academic pathways among qualified members of these groups; ensuring that programs that are implemented with public or private support and effort are strong and effective; and, perhaps most important, ensuring a flow of information between school-to-work
programs and institutions and the labor markets their participants will transition into.

I hope that the research described in this book provides researchers with food for thought to investigate these issues further, informs policymakers about the potential benefits from school-to-work efforts but also about challenges and shortcomings that need to be addressed on an ongoing basis, and helps practitioners figure out how their programs, policies, and institutions can do more to improve school-to-work transitions for our nation’s youths.

The views expressed are those of the authors and do not reflect the views of the Public Policy Institute of California.

NOTES

1. They note that child labor laws, compulsory schooling laws, and requirements for “continuation school” (part-time schooling for those working but below the maximum age for compulsory schooling) tightened considerably in the same period, but discount these laws as a major factor in rising enrollment rates.
2. Osterman characterizes this period as one “in which adventure seeking, sex, and peer group activities are all more important than work” (16). An economic perspective on this is that because the wage is low early in the career, young individuals choose to consume more leisure.
4. Interesting questions have been raised about the extent to which vocational education prepares one for a “career,” conceptualized as a sequence of jobs entailing increasing responsibility and earnings, or just for one’s first job. The same question could be asked of all programs, policies, and institutions that seek to improve school-to-work transitions. It is important to bear this point in mind when one considers evaluations of these programs, policies, and institutions, which—in the event that they have data on labor-market outcomes, which is itself rare—typically have information only on very early outcomes. (See, for example, Kemple and Scott-Clayton 2004, and chapter 4 of this volume, by Neumark and Rothstein.)
6. More detail on a variety of school-to-work programs—not necessarily attributable to the STWOA—is provided in Thomas Bailey and Donna Merritt (1996).
7. See, for example, Tracy Schmidt (2000).
8. See, for example, Debra Donahoe and Marta Tienda (1999) and William T. Grant Foundation (1988).
10. In chapter 3, Stone and Aliaga draw the distinction between Tech Prep and these other school-to-work activities by referring to the latter as “work-based” school-to-work activities.
11. Because these results for the effects of school-to-work programs on idleness are present mainly among men, we doubt that they reflect substitution of time between work in the labor market and time spent parenting.

REFERENCES


