

# **CAREER PATHWAYS: EDUCATION WITH A PURPOSE**

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**Compiled and Coauthored  
by Dan M. Hull**

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# FOREWORD

If there's one thing I've learned in my years of sharing *Chicken Soup for the Soul* around the world, it's that everyone—and I do mean *everyone*—has dreams. Dreams of creating personal success. Dreams of a fulfilling career. Dreams of making the world a better place. Dreams of a better lifestyle, a way out of poverty, a way to support their family and afford the life they want. This is especially true of young people. They're eager, enthusiastic, and searching for ways to live out their dreams.

Isn't that what our education system should be about, shepherding our children towards their life goals? Yes, academic knowledge is important—who can survive today without a good grounding in math, science, reading, writing, technology and computer literacy?—but shouldn't the academic knowledge we teach be couched in what makes it useful in our kids' future life and work? Haven't we seen enough kids so turned off by school that they drop out and give up on their dreams? And haven't we seen how motivated young people can become when they see that what they are learning is helping them reach for the job they want, follow the career they seek, and fulfill the ambitions they have to change their world?

I strongly believe—and I've said it many, many times—that living your dreams is always the result of information, inspiration and perspiration. I also believe that if our schools provide the information and the inspiration, our students will provide the perspiration. And that's why I am so excited and honored to be asked to write a Foreword for this important book. I sincerely believe that the Career Pathways approach is the best way schools can impart both the information *and* the inspiration.

A few years ago I had the privilege of speaking to over 3000 practitioners at the National Tech Prep Network conference in Nashville. I personally met many of these outstanding educators and was inspired by how passionate they were to make a difference for their students. I learned a

great deal about the Tech Prep reform program and have watched with interest and admiration as educators have carried out this hard but worthwhile work. It is clear to me that Career Pathways builds on what Tech Prep has learned over the years and can help schools restructure themselves to offer this wonderful new “information+inspiration” educational opportunity to all of their students.

I encourage you to read this book carefully and thoughtfully. And as you do, I encourage you to think about the effects Career Pathways can have on students. I urge you to put these changes into effect in your school, your community, and your district. I am convinced that if you do, you will be sharing “chicken soup for your students’ souls” for generations to come!

Love to you!

—Jack Canfield  
Co-creator of the #1 NY Times  
best-selling book series  
*Chicken Soup for the Soul*®

# INTRODUCTION

As high schools move to the forefront of education reform, policymakers and practitioners from the national level to the local level are looking for ways to improve student achievement, high school graduation rates, and the career and college prospects for high school-aged young people. Research indicates that high school students need and want learning opportunities that challenge and engage them and that allow them to develop supportive, caring relationships with adults. Within this broad outline, there are many ways to design schools to help every young person be successful and ready to pursue postsecondary education or a career.

As policymakers and practitioners consider reform strategies, career and technical education (CTE) is often omitted from the discussion. This is not because policymakers don't think CTE is important. Indeed, most policymakers I know strongly believe that CTE supports economic development and the preparation of a skilled workforce needed to meet the demands of today's labor market. Unfortunately, however, debates about career preparation and high school reform are often held in distinct and separate spheres.

Dan Hull and his colleagues included in this book know that these conversations must be brought together—not only to ensure that we have a highly skilled labor force, but also to make sure we are providing an education that is relevant and meaningful to young people. According to several recent national polls, a significant majority of teens say they are not challenged academically and that they find high school boring and irrelevant. As we think about how to remake high schools to improve academic outcomes and ensure that our students can compete in the labor market against students from any other developed country, we also need to ensure that classes are engaging and that students are motivated to learn because they see a pathway to their future.

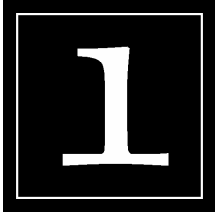
The chapters in this book provide a framework for helping policymakers and practitioners, particularly at the state and local levels, think about how to redesign high schools to make them academically challenging and engaging, as well as allowing for the creation of meaningful student-adult relationships. The Career Pathways concept outlined by Dan Hull and supported by a host of nationally known education experts, policymakers, and practitioners is one strategy for recreating high schools that are rigorous and relevant and that provide smaller learning communities allowing for stronger relationships between adults and students.

Career Pathways ensure that all students have a strong academic foundation in English, math, social studies, and science, linked to state standards, and that courses are taught in the context of careers to make them more relevant to students. Career Pathways also allow students to build a smoother transition to postsecondary education in their chosen fields by encouraging them to take postsecondary education courses and earn college credit while in high school. Career Pathways continue the CTE focus on helping students connect to the real world of work through hands-on work experience.

The Career Pathways framework builds on the foundation laid by the Tech Prep program over the past two decades. Like Tech Prep, Career Pathways help the “neglected majority” of high school students see a purpose in what they learn and gain needed skills for the labor market. Career Pathways are an updated version of Tech Prep, building on what we have learned from research and the innovative practices of state and local policymakers, secondary and postsecondary educators, and employers around the country.

Dan Hull helped to lead the Tech Prep reforms of the 1990s with his vision and determination. Along with his coauthors, he is making another significant contribution with this well-timed book, which demonstrates the power of Career Pathways in reforming high schools.

Betsy Brand, Director  
American Youth Policy Forum  
September 2005



# CAREER PATHWAYS: EDUCATION WITH A PURPOSE

**Dan Hull**

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Public secondary education in the United States has lost sight of its *purpose*. It no longer serves the majority of American young people by helping them make long-range decisions, choose careers, become good citizens, and prepare for higher education. In short, public secondary education in the United States no longer helps the majority of its students prepare to become capable, successful, and personally fulfilled *adults*.

Evidence of this deterioration, particularly in urban schools, has been emerging for four or five decades, as our country has attempted to transfer to public education responsibilities that have been increasingly abandoned by homes, churches, social service agencies, community economic development organizations, the military, and apprenticeships (or employer job training). A declaration of crisis in our schools was issued by the 1983 report “A Nation at Risk,” which warned that the academic achievement of U.S. high school students lagged significantly behind that of their counterparts in other developed countries. In reaction to this revelation, governors and state legislators called for the adoption of

rigorous academic standards for all students. Along with the new standards came high-stakes testing designed to hold schools and teachers more accountable for student academic achievement. Unfortunately, teachers and principals have reacted to this mandate by devoting an inordinate amount of class time to “teaching to the test,” rather than exploring teaching strategies that can improve student learning more broadly. Teachers and principals are not to blame for this unfortunate and counterproductive state of affairs. They are under constant pressure to raise test scores. The fault lies with educational leaders and policymakers—who have lacked the vision and courage to reestablish and maintain an environment that nurtures effective teaching and learning.

The ineffectiveness of today’s public school system negatively impacts some students more than others. In his 1984 landmark book *The Neglected Majority*, Dale Parnell lamented the dearth of educational alternatives available to the more than 60 percent of our young people who, by the ninth grade, performed below grade level in core academic areas such as math, science, and language arts. In the eyes of educational leaders, those students lacked “head skills” and consequently either were placed in a “general track” and socially promoted, or were provided “hand skills” through traditional vocational education. Parnell proposed the Tech Prep Associate Degree (TPAD) program, which empowered “neglected majority” students to improve their academic skills through contextual teaching and continue their education and training after high school in articulated technical programs in cooperating community and technical colleges. The TPAD concept was an important step in the right direction: It sought to reestablish a *purpose* for education—a purpose that students could understand and employers could respect.

In 2001 the federal government passed the No Child Left Behind (NCLB) law, which reemphasizes and heightens the states’ efforts to make schools accountable to federal guidelines for evidence of school improvement. So far, most of NCLB’s funding and accountability measures have focused on elementary schools. To date there is very little evidence that

*high schools* have improved. American high schools continue to fall short of their potential in at least four key areas:

- *High school dropout rates*—Dropout rates remain high, especially among poor and minority students. The National Center for Education Statistics, for example, reported that in the year 2000, 3.8 million young adults “were not enrolled in a high school program and had not completed high school.”<sup>1</sup> Similarly, the National Commission on the High School Senior Year reported that in some cities as many as 40 percent of high school students drop out before graduation.<sup>2</sup>
- *Generally low academic expectations*—A 2001 report of the National Commission on the High School Senior Year stated that “in 1997, only 43 percent of high school seniors reported themselves to be in demanding ‘academic’ programs, compared with 45 percent in ‘general education’ and 12 percent in vocational education programs.” The report went on to say that “among 1998 graduates, according to the U.S. Department of Education, just 44 percent earned the minimum number of academic credits recommended in 1983 by the National Commission on Excellence in Education in its seminal report, *A Nation at Risk*.”<sup>3</sup> Similarly, a recent nationwide survey of teenagers conducted by the National Governors Association suggested that many students believe that their high school experience was too *easy*. Of the more than 10,000 teenagers

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<sup>1</sup> National Center for Education Statistics, *Dropout Rates in the United States: 2000* (Washington, DC: U.S. Department of Education, Office of Educational Research, 2001, NCES 2002-114), v.

<sup>2</sup> *The Lost Opportunity of the Senior Year: Finding a Better Way. Preliminary Report of the National Commission on the High School Senior Year* ([http://www.nps.k12.va.us/aaa/CIA/losttop/Senior\\_Year\\_Report\\_Final.pdf](http://www.nps.k12.va.us/aaa/CIA/losttop/Senior_Year_Report_Final.pdf), accessed July 2005), 15.

<sup>3</sup> National Commission on the High School Senior Year. (2001). *Raising Our Sights: No High School Senior Left Behind*. Princeton, New Jersey: Woodrow Wilson National Fellowship Foundation, 7 (citing information published by the National Center for Education Statistics).

surveyed, “fewer than two-thirds believe that their school had done a good job challenging them academically or preparing them for college. About the same number of students said their senior year would be more meaningful if they could take courses related to the jobs they wanted or if some of their courses could be counted toward college credit.”<sup>4</sup>

- *Low secondary-to-postsecondary transition rates*—According to the National Center for Education Statistics, since 1998 the percentage of students who enter postsecondary education immediately following high school is around 64 (somewhat lower for minority students).<sup>5</sup> Given the importance of postsecondary education in today’s job market, that number is far too low. One contributor to lackluster secondary-to-postsecondary transition rates is the phenomenon known as the “wasted senior year.” For at least the last two decades, educators have recognized that the high school senior year (and often the junior year) tends to be poorly used. “The senior year . . . should be the embarkation point that launches the well-prepared student toward success in postsecondary education or the ever-more-complex workplaces of the new economy. The high school senior year and graduation . . . become not so much a finish line as a relay station. [Unfortunately, today] the handoff is fumbled and the baton too often dropped.”<sup>6</sup>
- *College remediation*—The National Commission on the High School Senior Year calls today’s remediation rates astounding. According to the commission, “remediation takes place in all community colleges, in four out of five public four-year universities, and in more than six out of ten private four-year institutions. Large numbers and

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<sup>4</sup> Michael Janofsky, “Students Say High Schools Let Them Down,” *New York Times*, July 16, 2005 (accessed via <http://www.nytimes.com>).

<sup>5</sup> National Center for Education Statistics, *The Condition of Education 2005* (<http://nces.ed.gov/pubs2005/2005094.pdf>), 58.

<sup>6</sup> National Commission on the High School Senior Year, 12.

proportions of students require remediation on these campuses. The proportion ranges from a low of 13 percent at private four-year colleges to a high of 41 percent at public two-year institutions. Well over one-quarter of all students (29 percent) require remediation in one or more subjects; 24 percent are required to take remedial mathematics courses, while 13 percent and 17 percent, respectively, are required to enroll in remedial reading and writing courses. The cost of remediation has been estimated to be between \$260 million and \$1 billion, annually.”<sup>7</sup>

The effects of the inadequacy of today’s high schools reach well beyond the educational sphere. Employers are well aware of—and increasingly dissatisfied with—the inabilities of secondary (and even postsecondary) graduates to meet the demands of the workplace. The results of a 2001 survey conducted by the National Association of Manufacturers (NAM) indicate that “manufacturers see a serious problem with the availability of future workers. Seventy-eight percent of respondents [to the NAM survey] believe public schools are failing to prepare students for the workplace . . . despite a decade of various education reform movements. Respondents said the biggest deficiency of public schools is not teaching basic academic and employability skills.” The survey results also indicate that employers in manufacturing see the “top deficiency” as “a lack of basic employability skills.”<sup>8</sup> This is consistent with the recommendations of the SCANS report (1991), which called for a three-part foundation of **basic skills** (reading, writing, arithmetic and mathematics, speaking, and listening), **thinking skills** (thinking creatively, making decisions, solving problems, seeing things in the mind’s eye, knowing how to learn, and reasoning), and **personal qualities**

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<sup>7</sup> *The Lost Opportunity of the Senior Year*, 14.

<sup>8</sup> National Association of Manufacturers, *The Skills Gap 2001: Manufacturers Face Persistent Skills Shortages in an Uncertain Economy* ([http://www.nam.org/s\\_nam/doc1.asp?CID=200958&DID=224443](http://www.nam.org/s_nam/doc1.asp?CID=200958&DID=224443); accessed July 2005).

(individual responsibility, self-esteem, sociability, self-management, and integrity).<sup>9</sup>

## WE'RE TREATING THE SYMPTOMS—NOT THE INHERENT PROBLEMS

Accountability in public education is necessary and vital, but relying on the rewards and penalties of old-style standardized tests will not, and cannot, significantly improve our schools.<sup>10</sup> Traditional vocational education has been severely criticized in recent years for using secondary schools to “train” students in job tasks, or to run pieces of equipment. It seems to me that using academic class time to drill students on how to pass test questions is “test training.” Neither of these examples represents good education.

Improving public high schools in the United States—for all students—calls for six systemic changes:

- Requiring each student to select an *interest area* that gives him or her a purpose for remaining in school and answers the question, “Why do I have to learn this?” For some students, the interest area may be athletics, music, or liberal arts. For most, it will be career pursuits.

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<sup>9</sup> The Secretary’s Commission on Achieving Necessary Skills, *What Work Requires of Schools: A SCANS Report for American 2000* (U.S. Department of Labor, 1991) (<http://wdr.doleta.gov/SCANS/whatwork/whatwork.pdf>; accessed July 2005).

<sup>10</sup> This statement is not intended to suggest that standardized testing is categorically detrimental to the quality of education. On the contrary, testing is necessary. Without it, states cannot know which students and schools are succeeding and which need help. Nevertheless, over the past several years education researchers have amassed considerable evidence that the increasing attention paid to standardized tests has tended to narrow the educational experience to low-level knowledge and skills. For more on growing recognition of the need for a “new generation of tests,” see *Testing: Setting the Record Straight, Achieve Policy Brief, Issue Number One* (Summer 2000), published by Achieve, Inc., in collaboration with the National Governors Association (<http://www.achieve.org>).

- Requiring each student to formulate a thoughtful and achievable *plan* to prepare for the next step after high school graduation. The next step may be college, employment, an apprenticeship, or enlistment in the military service.
- Providing a *context* within which students learn required, rigorous academics. Usually, the context will be the interest area.
- A *restructured curriculum* that supports the interest area, the chosen plan, and the context. The curriculum must be designed on the basis of approved state and national academic, skill, and employability (soft skills) *standards*.
- A *secondary-to-postsecondary curriculum framework* that provides for and encourages smooth transition from high school to college and allows students in the eleventh and twelfth grades to begin taking (academic and career-oriented) college courses through dual enrollment. This will allow students to graduate from high school with substantial numbers of higher education credits.
- Restructuring large high schools (over 100 students per grade) into *small learning communities* organized around student interest areas.

Traditional vocational education has been severely criticized in recent years for using secondary schools to “train” students in job tasks, or to run pieces of equipment. It seems to me that using academic class time to drill students on how to pass test questions is “test training.” Neither of these examples represents good education.

Accomplishment of these systemic changes is, indeed, a tall order. In fact, it constitutes a task that public high schools should not take on alone. These changes must be designed and implemented with the cooperation, support, and participation of partners from higher education, employers, community leaders, and policymakers. Most of the changes can be modeled after successful practices found in Tech Prep and other

innovative strategies. In a few cases, scientifically based evidence is available to prove the effectiveness of innovative strategies; more often than not, we must rely on *promising practices*, substantiated by useful, anecdotal evidence. But, in the process, each partnership must benchmark where it is and frequently measure the progress being made.

## **A VITAL U.S. ECONOMY DEPENDS ON A WELL-EDUCATED WORKFORCE**

In 1998, the Center for the Development of Leadership Skills at Rider University surveyed 428 employers regarding the skills they would most highly value from their employees.<sup>11</sup> (The sample of small-to-very-large employers included most career fields.)

The top five skills identified (in all career fields) were these:

- Computer literacy
- Critical thinking
- Problem solving
- Teamwork
- Interpersonal relations

Academic achievement was also an attribute that most employers valued highly. (Computer literacy should be regarded as a foundational subject in middle schools, high schools, and colleges.) An examination of the entire Rider study showed that its results complemented the findings of the 1991 SCANS report. Of course employers want their workers to be familiar with, and trainable in, the specialties of their fields—but they want the foundations first. Career preparation in secondary education must focus on the foundations and the “technical core.”

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<sup>11</sup> *Who Is Most Likely to Succeed?* (Rider University, Center for the Development of Leadership Skills, 1998).

Employers who hire high school graduates want about the same thing that colleges want from their applicants: a solid foundation in useful academics (problem solving), a focus on the careers they want to pursue, employability (soft) skills, and completion of a core of technical subjects related to their chosen fields of study. The redesigned high school curriculum envisioned here could be structured so that all graduates would be prepared to enter some form of higher education. But if they needed or wanted to go to work right out of high school, they would be employable in their chosen fields.

In South Carolina, employers are saying that, while 85 percent of their jobs require education and training beyond high school, only

20 percent require at least four-year college degrees. This means that 65 percent of the jobs require some education beyond high school, but not four-year degrees. (The preferred credential is the associate degree.)<sup>12</sup>

The institutions that are ideally positioned to provide this postsecondary education and training are the country's almost 1200 community and technical colleges. These institutions, which are plentiful in every region of the country, are one of our greatest assets. Indeed, given that their mission includes the preparation of well-qualified technicians for the 65 percent of today's jobs that require only associate degrees and/or postsecondary certificates, they are essential if the United States is to retain its position as the economic leader of the world. But community and technical colleges cannot do it

Employers who hire high school graduates want about the same thing that colleges want from their applicants: a solid foundation in useful academics (problem solving), a focus on the careers they want to pursue, employability (soft) skills, and completion of a core of technical subjects related to their chosen fields of study.

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<sup>12</sup> South Carolina Governor's Workforce Education Task Force, *Pathways to Prosperity: Success for Every Student in the 21st-Century Workplace* (October 2001), 3, 7.

alone; they must partner with “feeder high schools” and universities.

The National Science Foundation (NSF), through its Advanced Technological Education (ATE) initiative, annually provides \$45 million in grants to community and technical colleges to support the creation, improvement, and dissemination of associate degree programs in new and emerging technologies. Despite their excellent programs, many of the colleges that receive ATE funds struggle to recruit adequate numbers of students. That struggle points to the need for a *student pipeline* in which high school students choose technical fields early and lay a solid foundation that enables them to transition smoothly to articulated two-year postsecondary programs in those fields. In an attempt to create that pipeline for colleges with ATE programs, NSF and the National Tech Prep Network (NTPN) have jointly sponsored ATE/Tech Prep meetings (typically half-day sessions just prior to the annual NTPN conference) at which educators and business partners network and share ideas. NSF/ATE funds are being used by ATE recipient colleges to build partnerships with the high schools in their service areas.

It is absolutely essential that the student pipeline (from high schools to two-year technical programs) be enlarged and improved—and that partnering secondary schools and community and technical colleges align high school graduation requirements with college entrance requirements.

## **BUILDING ON THE TECH PREP MODEL**

In 1990, during the reauthorization of the Carl D. Perkins Vocational and Applied Technology Education Act, the U.S. Congress recognized the need to make significant changes in career and technical education (CTE). To do this, Congress created a “Tech Prep set-aside” (i.e., a separate funding stream) to fund innovative secondary-postsecondary partnerships designed to improve the academic proficiency of technical students and facilitate student transition from secondary to postsecondary institutions through articulation agreements. The legislation also encouraged integration of academic and

technical courses and funded materials and teaching strategies for applied, or contextual, approaches to academic learning.

Over 900 partnerships (Tech Prep consortia) of secondary and postsecondary institutions and employers and thousands of articulation agreements have been created. Because of Tech Prep's success as a catalyst for innovation, funding for Tech Prep was increased and the legislative set-aside has continued for 15 years. In 1992, the Tech Prep legislation was amended to permit 4+2 partnerships (along with the original 2+2), allowing students to begin Tech Prep in the ninth grade. In 1998, when the Perkins III legislation was reauthorized, the basic state grant placed greater emphasis on contextual teaching (a Tech Prep initiative) and the Tech Prep set-aside was modified to place greater emphasis on raising academic standards and stronger participation by the postsecondary institutions, including universities.<sup>13</sup>

Unfortunately, the language of the Perkins legislation has been interpreted to mean that Tech Prep success should be measured as a separate track within CTE (i.e., that students in Tech Prep programs should be identified and that their academic and career success and sustainability should be measured). This has been very difficult to accomplish given that Tech Prep funding (which represents about one-tenth of all Perkins funds) has been used primarily to sponsor *innovation*, which has benefited both Tech Prep and non-Tech Prep students.

As an innovative change agent, Tech Prep has been extremely successful.

- Cooperation is now widespread between secondary and postsecondary teachers as well as between academic and technical faculty members.

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<sup>13</sup>Debra Bragg, *New Lessons about Tech Prep Implementation: Changes in Eight Selected Consortia Since Reauthorization of the Federal Tech Prep Legislation in 1998* (National Dissemination Center for Career and Technical Education, 2002) (<https://www.nccte.org/publications/infosynthesis/r&dreport/NewLessons-Bragg-2.pdf>; accessed July 2005).

- The technical curricula in high schools have moved away from narrow “job training” and more toward development of foundational and career skills. Consequently, students are not “tracked”—they have many options and plenty of opportunities to *change their career goals without being penalized*.
- Contextual teaching of academics has been demonstrated to be effective in improving the academic achievement of “neglected majority” students.<sup>14</sup>
- More high school students are making decisions about their career pursuits.
- Larger percentages of secondary Tech Prep graduates are continuing their education and career pursuits in cooperating colleges.<sup>15</sup>
- Tech Prep students are entering colleges with advanced standing and/or substantial postsecondary credits already earned.

[In Tech Prep, and Career Pathways] students are not “tracked”—they have many options and plenty of opportunities to *change their career goals without being penalized*.

Tech Prep provides education with a *purpose!*

As a “change agent” Tech Prep has served—and continues to serve—a very important role in public education. As it has matured from 1990 to 2005, it has embraced and enhanced

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<sup>14</sup> Elliott Medric, Sarah Calderon, and Gary Hoachlander, “Contextual Teaching and Learning Strategies in High Schools: Developing a Vision for Support and Evaluation,” in *Essentials of High School Reform: New Forms of Assessment and Contextual Teaching and Learning*, edited by Betsy Brand (American Youth Policy Forum, September 2003), 35–71.

<sup>15</sup> Bettina L. Brown, “Promising Tech Prep Outcomes,” *The Highlight Zone: Research @ Work*, no. 3 (National Dissemination Center for Career and Technical Education, 2001) (<http://www.nccte.org/publications/infosynthesis/highlightzone/highlight03/highlight03-techprep.pdf>; accessed July 2005).

other innovative strategies, such as worksite learning, dual enrollment, and career academies (small learning communities).

In 2003, the U.S. Department of Education's Office of Vocational and Adult Education (OVAE) sponsored

Tech Prep provides education with a *purpose!*

an initiative designed to identify working models of *technical programs of study* and post information about them on a web-based *National Clearinghouse for Career Pathways*. A definition and criteria for Career Pathways were established.<sup>16</sup> Over 50 Tech Prep partnerships applied for admission to the clearinghouse. Reports on twenty partnerships were posted; ten others submitted excellent, extensive information. In this yearlong exercise, CORD observed several things:

- Some Tech Prep partnerships are excellent and provide great opportunities for “neglected majority” students.
- Some partnerships are very strong in some aspects of Tech Prep, while other partnerships are very strong in others.
- There are no *ideal models*.

Out of this project (and others), a clearer definition has emerged as to what an ideal Career Pathway should be based upon:

- It has the basic characteristics of a 4+2 Tech Prep program of study, but it goes beyond what has been required of Tech Prep.
- It is for all students.
- It requires a new curriculum framework (structure) based on standards that are developed jointly by secondary and postsecondary partners (with assistance and guidance from employers).

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<sup>16</sup> Dan M. Hull, “Career Pathways: The Next Generation of Tech Prep,” *Connections*, vol. 14, no. 5 (<http://www.cord.org/uploadedfiles/Vol14No5.pdf>; accessed July 2005; accessed July 2005).

- The curriculum keeps *options open*; students can build on this foundation to pursue advanced degrees in higher education.
- The curriculum is standards-based and technology-based—not equipment-based.
- It prepares students for careers—not just their first jobs.
- Completers must have the ability to acquire new information and skills as technical fields change.
- In the future, all careers will require high levels of *useful academics*.
- Most careers will require education beyond high school.
- World-class workers must be *problem solvers* who can tackle open-ended, multidisciplinary problems. (Reciting from rote learning and “teaching the task” should be minimized in Career Pathways.)

World-class workers must be *problem solvers* who can tackle open-ended, multidisciplinary problems.

Coincidentally, with the evolution of Tech Prep toward Career Pathways, the U.S. Congress is planning reauthorization of Perkins to align all CTE with good Tech Prep—or Career Pathways. Details of this legislative plan and its implication will be discussed in Chapter 4.

## WHAT ARE CAREER PATHWAYS AND HOW DO WE GET THERE?

In early 2004, CORD’s National Clearinghouse for Career Pathways personnel met with representatives of the College and Career Transitions Initiative (CCTI) to “hammer out” a succinct description of the term *Career Pathway*. The resulting definition is shown in Figure 1-1.

A **Career Pathway** is a coherent, articulated sequence of rigorous academic and career/technical courses, commencing in the ninth grade and leading to an associate degree, baccalaureate degree and beyond, an industry-recognized certificate, and/or licensure. The Career Pathway is developed, implemented, and maintained in partnership among secondary and postsecondary education, business, and employers. Career Pathways are available to all students, including adult learners, and lead to rewarding careers.

The essential characteristics of an ideal **Career Pathway** are the following:

1. The secondary pathway component:
  - Meets state academic standards and grade-level expectations.
  - Meets high school testing and exit requirements.
  - Meets postsecondary (college) entry/placement requirements.
  - Provides foundation knowledge and skills in chosen career clusters.
  - Provides opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements.
2. The postsecondary pathway component provides:
  - Opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements.
  - Alignment and articulation with baccalaureate programs.
  - Industry-recognized skills and knowledge in each cluster area.
  - Opportunities for placement in the chosen career clusters at multiple exit points.
3. Pathway partners ensure a culture of empirical evidence is maintained by:
  - Regularly collecting qualitative and quantitative data.
  - Using data for planning and decision-making for continuous pathway improvement.
  - Ongoing dialog among secondary, postsecondary, and business partners.

**Figure 1-1. Definition of Career Pathway**

At this point, it is appropriate to distinguish between Career Pathways and career clusters, and to define curriculum frameworks. As is the case in many innovative elements in education, new terms are sometimes used in different, even contradictory, ways. For the purpose of this book, the following definitions will be adopted:

**Career cluster**—A career cluster is a grouping of occupations according to common knowledge and skills for the purpose of organizing educational programs and curricula. In 1998 the U.S. Department of Education/OVAE defined sixteen career clusters (listed in Chapter 3). The State Directors of Career and Technical Education subsequently developed databanks of skills and required knowledge for each of the sixteen career clusters. (This work is described in Chapter 3.)

**Career Pathway**—A Career Pathway is a 4+2 program of study leading to employment in an occupational field and/or continued education and training. A Career Pathway is not a “track” that limits student choice. A cluster can encompass many Career Pathways. The high school portion of a Career Pathway is sufficiently broad to support postsecondary education and training for other occupations within the cluster.

**Curriculum framework**—A curriculum framework is the plan for a 4+2 program of study, or Career Pathway. Curriculum frameworks consist of two elements: (1) recommended grade-9–14 course sequences that satisfy requirements for high school graduation and transition to postsecondary education and training and (2) course descriptions, with prerequisites, recommended grade levels, credits, and standards to be achieved by students. Curriculum frameworks reflect academic, employability (SCANS) and technical (skill) standards *as well as entrance requirements for postsecondary curricula*.<sup>17</sup> Development of part 1, the course sequence (sometimes called an *egg crate*), begins with a blank chart such as the following.

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<sup>17</sup> Dan M. Hull, “Redefining CTE: Seizing a Unique Opportunity to Help the ‘Neglected Majority’ Become World-Class Students, Workers and Citizens,” *Techniques*, May 2003.

	Grade	English	Mathematics	Science	Technology	Technology	Other
Foundation	9						
	10						
Technical Core	11						
	12						
Technical Specialty	13 1st Semester						
	13 2nd Semester						
	14 1st Semester						
	14 2nd Semester						

When the egg crate has been filled in, each box holds the title of a course. (More information on curriculum frameworks is included in Chapter 3.)

Part 2 of the curriculum framework provides the beginning of a curriculum planning guide that will ultimately include course outlines, suggested textbooks and other reference materials, computer hardware and software requirements, example activities and projects, assessment strategies, and suggestions for worksite experiences.

## HOW DO CAREER PATHWAYS DIFFER FROM TECH PREP?

In many ways, Career Pathways are an extension of good Tech Prep practices. The key element in a Career Pathway is the *articulated, secondary-postsecondary curriculum*. But Career Pathways require a different approach to curriculum.

In Tech Prep, the secondary institution usually has its own employer advisory committee and develops its curriculum separately. Likewise, the college has its own advisory committee and develops its own curriculum. Then a third party

(the consortium) brings the technical teachers from the high school together with the technical faculty members from the college to *align* the curriculum, remove redundancies, and develop articulation agreements.

In a Career Pathway, academic and technical teachers from the high school meet with academic and technical faculty members from the college—and a single, joint employer advisory committee—to design a curriculum framework for grades 9–14. To the maximum extent possible, eleventh- and twelfth-grade students are allowed to take selected courses for dual credit. Also, to significantly reduce (if not eliminate) the need for remediation at the postsecondary level, academic requirements for high school graduation are aligned with the college’s entrance requirements. (A few Tech Prep consortia are already moving in this direction.)

In many ways, Career Pathways are an extension of good Tech Prep practices. The key element in a Career Pathway is the *articulated, secondary/postsecondary curriculum*. But Career Pathways require a different approach to curriculum.

## ISN'T THIS WHAT WE'RE ALREADY DOING IN TECH PREP?

Probably not, but Career Pathways can most easily be created from Tech Prep partnerships (or using Tech Prep practices) if we're willing to improve some areas that might have been neglected and *stretch a little farther* beyond what we planned. To assist a partnership (consortium) in identifying areas in which improvement—or *stretching*—is needed, we've created the Career Pathways Evaluation Instrument, presented as Figure 1-2.<sup>18</sup>

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<sup>18</sup> For a printable version of the instrument, see Dan M. Hull, "Career Pathways: The Next Generation of Tech Prep," *Connections*, vol. 14, no. 5 (<http://www.cord.org/uploadedfiles/Vol14No5.pdf>; accessed July 2005).

The instrument was designed to help existing secondary-postsecondary partnerships measure their progress in Career Pathways against eighteen benchmarks. The benchmarks help partnerships see where they are and, even more important, where they should be going. The reliability of the instrument rests on several key points:

- The eighteen benchmarks were derived from the consensus definition of Career Pathways (see Figure 1-1).
- The benchmarks were validated by educational experts from across the country.
- The benchmarks have been rigorously tested against the findings of educational research.
- The rating criteria for the instrument (i.e., the significance of each item's choices, 1–5) represent the consensus of a panel of experts.
- The instrument has been presented and favorably reviewed at a number of well-attended events, including the 2004 national NTPN conference in Minneapolis (3000+ attendees) and several workshops hosted by the Career Pathways Strategic Improvement Coalition (CPSIC; see <http://www.cord.org/cpsic>). (Though CPSIC is still in only its first year, the CPSIC workshops have thus far attracted around 800 people representing 30 states and Washington, D.C. Attendees have included over 240 administrators and 44 officials of state departments of education.)

The details of the development and validation of the Career Pathways Evaluation Instrument are provided in Appendix 1.

At this point, the best way to understand Career Pathways is to stop reading and use the instrument to determine where your partnership is on each of the eighteen benchmarks. To see what each selection (1, 2, 3, 4, or 5) signifies, see Appendix 2. [*The reader should attempt to complete the instrument before going on to the next paragraph.*]

CHAPTER 1: CAREER PATHWAYS: EDUCATION WITH A PURPOSE

<i>Scale: 1 = This is NOT being done. 5 = This is being done VERY WELL.</i>	1	2	3	4	5
1. Career Pathways are guided by one or more 4+2 (+2) curriculum frameworks.					
2. Career Pathways include comprehensive student career guidance and counseling.					
<b>Secondary component:</b>					
3. Meets academic standards and grade level requirements.					
4. Meets high school standardized testing and exit requirements.					
5. Meets postsecondary (both 2-year and 4-year college) entry and placement requirements.					
6. Provides academic and technical foundation knowledge and skills in a chosen Career Pathway.					
7. Provides opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements.					
<b>Postsecondary component:</b>					
8. Provides opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements.					
9. Provides alignment and/or articulation with baccalaureate programs.					
10. Provides industry-recognized knowledge and skills.					
11. Provides employment opportunities for high-wage, high-demand careers in the chosen Pathway and provides multiple exit points.					
<b>Business:</b>					
12. Ensures that students are learning current, in-demand skills.					
13. Provides students work-based learning experiences after the 11th grade.					
14. Supports student recruitment and provides ongoing support for the Career Pathway program.					
<b>Partnership ensures a culture focused on improvement by:</b>					
15. Collecting qualitative and quantitative data on academic and career success, retention rates, dropouts, graduation, transitions, and remediation.					
16. Using data for planning and decision-making.					
17. Providing targeted professional development for faculty, administrators, and counselors to improve teaching/learning and integration of technical and academic instruction.					
18. Maintaining ongoing dialogue among secondary, postsecondary, and business partners.					

**Figure 1-2. Career Pathways Evaluation Instrument**

The instrument is useful as a *planning tool* because it can help a partnership determine how it should improve in the coming year. After completing the instrument, the practitioner is able to identify benchmarks in which his or her partnership ranks relatively low and design strategies for improving in those areas.

The remaining chapters in this book provide understanding and insight into effective strategies for improvement in each area.

## EDUCATION WITH A PURPOSE

Imagine an ideal partnership (or consortium), one that earned a 4 or a 5 for every criterion on the Career Pathways Evaluation Instrument. I believe the high school(s) in that consortium would have a clear sense of *purpose*. But the role of the high school(s) in that ideal consortium would be very different from the role that conventional high schools have filled for many years. In our perfect consortium, the **high school role** would be to:

- Provide context for academic achievement,
- Provide motivation (and desire) for students to remain in school,
- Provide a *level playing field* for students with different learning styles,
- Provide guidance for career selection and a foundation for career pursuit,
- Use career preparation to provide interdisciplinary problem-solving and critical thinking, and
- Provide a foundation for lifelong learning—and lifelong earning.

Likewise, the role of the college in the partnership would be different from the role of conventional colleges. In our perfect consortium, the **college role** would be to:

- Provide the leadership to convene the partnership,

- Provide curriculum assistance and professional development for secondary teachers,
- Participate in recruiting students into and helping them select appropriate Career Pathways,
- Share its employer advisory committee with the high schools,
- Share its labs and equipment with high schools,
- Provide the opportunities for dual enrollment and dual credit, and
- Be accountable for the quality of its graduates to employers—and to higher education.

That sounds like the *purpose-driven* educational experience I would want for my grandchildren.