

# The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

America's Career Resource Network Association<sup>1</sup>  
Research-based Policy Guidance

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## Overview

As policymakers deliberate and formulate policies that affect career information and services, America's Career Resource Network Association (ACRNA) urges consideration of the extensive body of evidence of the educational, social, and economic value of career information and services that foster *informed and considered career decisions*.

**Educational Outcomes** (Page numbers in parentheses refer to supporting sections.)

- Improved educational achievement (9)
- Improved preparation and participation in postsecondary education (9)
- Better articulation among levels of education and between education and work (11)
- Shorter time to graduation (11)
- Higher graduation and retention rates (11)

## **Social Benefits**

- Benefits to family, peers, and community (12)
- Higher levels of worker satisfaction and career retention (13)
- Shorter path to primary labor market for young workers (14)
- Lower incidence of work-related stress and depression (14)
- Reduced likelihood of work-related violence (15)

## **Economic Consequences**

- Higher incomes and increased tax revenues (16)
- Lower rates and shorter periods of unemployment (17)
- Lower costs of worker turnover (18)
- Lower health care costs (19)
- Lower incarceration and criminal justice costs (19)
- Increased worker productivity (19)

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<sup>1</sup> America's Career Resource Network is the Department of Education's implementation of Section 118 Carl D. Perkins Vocational and Technical Education Act of 1998 Reauthorization (P.L. 105-332). ACRNA is a nonprofit organization dedicated to promoting, supporting, and improving career information and services.



## **Background: *Informed and Considered Career Decisions***

*Informed and considered career decisions* are the product of a career development process that includes

- creating awareness of options,
- exploring possible career pathways,
- reviewing available information,
- clarifying interests, values, and skills through assessment,
- reflecting upon experiences,
- relating education and training options to occupational goals,
- experimenting through work sampling, volunteering, or employment,
- consulting with knowledgeable people in the field of interest,
- formulating plans for education, training, career entry, and retraining,
- making decisions and refining plans,
- implementing and adapting plans, and
- applying the career development process throughout the lifespan.

*Informed and considered career decisions* result in improved matches between people and their work. Such matching manifests itself in improved utilization of education and training resources, higher levels of worker satisfaction, preferred patterns of employment stability and mobility, increased income and benefits, and many attendant benefits to families and communities.

Career guidance professionals<sup>2</sup> may facilitate the career development process, or individuals may engage in the process on their own. Not all people will engage in all steps, and the sequence may vary; but however obtained, *informed and considered career decisions* represent a match of person and work in which the individual's skills, interests, values, beliefs, and purposes fit, align with, inform, and contribute to work, and work contributes to the individual's well-being and life goals.

For students, career information is an essential part of a comprehensive guidance process that extends throughout school years. Comprehensive guidance programs are effective in promoting *informed and considered career decisions* (Lapan, Gysbers, & Sun 1997; Whiston and Sexton, 1998). Comprehensive guidance represents a renewed emphasis on career development in schools (Dykeman, Ingram, Wood, Charles, Chen, & Herr, 2001).

Comprehensive guidance program content is designed to assist students and their parents in making *informed* educational choices, which lead to more educational and career options (Association for Career and Technical Education, 2003).

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<sup>2</sup> Career guidance professionals may be vocational psychologists, counseling psychologists, school counselors, teachers, librarians, or professionals employed in a variety of public and private organizations who assist individuals with various aspects of career development.



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

Schools may offer courses in career planning, and some schools require students to complete career plans. Despite consistent reports of the effectiveness of career development classes, a recent study of high school guidance offerings in the U.S. reported that career classes were offered in fewer high schools in 2002 than in 1984 (Parsad, Alexander, and Farris, 2002).

The career planning process was once thought to be completed during youth or young adulthood. With a changing nature of employment and higher expectations of individuals for quality in their relationship with work, a need has emerged for career development processes to take place throughout one's life. Indeed, experts such as Savickas (1999) and Jarvis (2003) assert that career self management is fundamental to success in the contemporary economy, which is characterized by rapid changes in the workplace, globalization, contingent work, international competition, and jobs that increasingly blur roles, functions, and responsibilities in accord with project needs. Career self management is the internalization of career development processes that enable an individual to navigate and prosper in a work world in which one's relationship to employment is in a state of flux, in which changing jobs and employers is the norm. In this challenging work world (liberating for some and terrifying for others), one's ability to work is mediated by the degree to which one can self market, self manage, align skills with work requirements, and satisfy clients and customers. In short, career self management rests squarely on the individual's ability to make *informed and considered career decisions*.

For many workers, changing occupational structures are thrusting them into situations that require career decision making. The Bureau of Labor Statistics estimates that there are 10.2 million contract workers in the U.S. (*Washington Post*, 2000), and millions more are caught in the decline of manufacturing and the shift to a knowledge economy. Even among employed Americans, there is little doubt that they would better inform themselves about career options if they were starting over (Hoyt and Lester, 1995). Fully 70 percent indicated they would seek more and better information before entering a career. And there is little doubt that the employment structures of the past in which one signed on with an employer for a lengthy stint provide fewer and fewer Americans with that type of employment relationship (U.S. Census Bureau, 1998, cited in Russiello, 2000). The most recent round of manufacturing job losses, which may represent *structural changes in the U.S. economy*, has left millions of Americans with uncertain futures as they search for pathways to re-employment, new careers, or survival without a traditional job. Whether employed or out of work, it is fair to say that all Americans will confront the question, "What work is right for me?" multiple times, if not continuously, throughout their work lives.

Dixon and Van Horn (2003) reported that one in five American workers had been laid off from their employment in the past three years. Coupled with a "job-loss recovery," economic security is a heightened concern for many Americans. Herr (2003) cites a recent Gallup Poll that reports 17 percent of Americans change jobs each year and that 10 percent



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

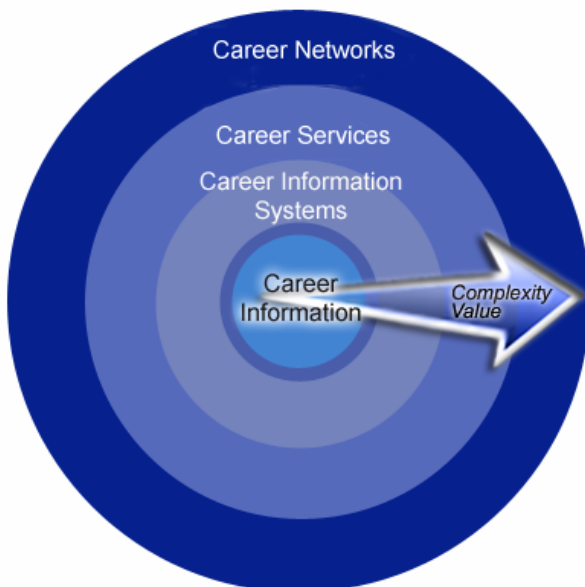
of the workforce need career planning help each year. This translates as more than 20 million job changers and 14 million people needing career planning assistance.

Whether the motivation is internal desire to improve one's situation or caused by a change in the work environment (layoff, plant closing, restructuring, downsizing, etc.) people are changing employment with increasing frequency (U.S. Census Bureau, 1998, cited in Russiello, 2000).

The currency of the contemporary labor market is skills. Those who have the capacity to articulate and align their skills with employment possibilities can participate in this market. Such capacity is essential to making *informed and considered career decisions*.

Given the urgent need for tools, resources, and processes that lead to *informed and considered career decisions*, investment in career information and the processes that lead to *informed and considered career decisions* should be among the first investments in national economic security and social well-being. Not only is the return on investment great, the cost to taxpayers is relatively small.<sup>3</sup>

### Information, Systems, Processes, and Networks: Facilitating *Informed and Considered Career Decisions*



Career information is part of a nexus of products, services, and processes that facilitate *informed and considered career decisions*. As depicted in the graphic to the left, career information extends outward in a direction of increased complexity and value. The outer circles of increased complexity act upon career information in extending, organizing, relating, integrating, and applying it to myriad human situations. The outermost circle provides a feedback loop that informs, improves, and extends the reach and effectiveness of career information, processes, and services.

<sup>3</sup> The principal federal investment in career information and services is through the Carl D. Perkins Vocational and Technical Education Act of 1998 Reauthorization (P.L. 105-332). The total annual outlay is less than ten million dollars. This money serves 142 million workers and 60 million students in K-16 and represents an annual investment of about 5 cents per person.



## **Career information**

Career information is the *intelligence* that guides workers (and the professionals who advise them) in the analytical process of examining, comprehending, and making decisions about the world of work. Career information comprises occupational information, industry information, education and training information, financial aid information, and career development process information. Career information is an essential component of career information systems, career guidance, and career education.

It is important to distinguish between career information and *data* such as labor market information, occupational data, and economic data. Career information developers convert these data into products understandable by and developmentally appropriate for intended audiences (Gillie, et al., 2002). Career information renders labor market information, occupational data, and economic data understandable and *meaningful* in the context of individual career development.

Career information makes possible systems that support career development and processes such as career guidance and career education. Career information is absolutely the one tool upon which nearly every step in the process of making *informed and considered career decisions* depends.

## **Career Information Systems**

Comprehensive career information systems, termed career information delivery systems (Ettinger, 1996; Sampson, et al., 1998, 1999), *integrate* information components with assessments, searching features, and other components.

Career Information Delivery Systems (CIDS) are comprehensive, integrated information resources that enable career development. By drawing data from many sources, and through articulating these data in understandable language, CIDS enable people to access many dimensions of the world of work. CIDS provide information about occupations, the workforce, education and training, and related topics. CIDS provide assessments and search features that enable users to relate their characteristics and preferences to occupations and to education and training options (Gillie, 2002).

Career information delivery systems add value to career information by relating and meaningfully integrating components in order to provide end users with personally tailored information. For example, some systems enable users to identify their strongest work skills in order to find occupations that demand these skills. In this way, a user can find work that allows the transfer of accumulated skills and expertise. Many systems provide assessments of work-related interests that enable users to explore occupations that match their particular patterns of interests. Career information delivery systems typically relate occupational information to education and training information; users can easily determine the preparation requirements for an occupation and can find education and training providers.



## Career Services

Career services include career counseling, career guidance, career consulting, and career education. Increasingly, there are sophisticated resources that enable individuals to make *informed and considered career decisions* through career development processes delivered via the World Wide Web (Harris-Bowlsbey, Dikel, and Sampson, 1998 and 2004).

Particularly relevant to this discussion:

1. The *value added* to career information through the many ways in which information is delivered, contextualized, and made meaningful by counselors, teachers, and others, and
2. The degree to which individuals *grow and develop*, internalize career development processes, and become life-long career self-managers (and sometimes teachers of others).

Career interventions mediated by counselors have substantially stronger effects (Oliver and Spokane, 1983) than unmediated career interventions. Whiston, Sexton, and Lasoff (1998) and Whiston, Brecheisen, and Stephens (2003) offer strong support for career interventions that are delivered by counselors. However, unmediated career information and services can extend to vast audiences and can provide a service to people who don't have access to the services of a career professional.

Several studies have found that career classes, workshops, and structured groups are useful interventions (Spokane and Oliver, 1983; Whiston, et al., 2003; Whiston, Sexton, & Lasoff, 1998; Peterson, Long, & Billups, 1999, 2003; Reed, et al., (2000) that produce a variety of documented outcomes.<sup>4</sup>

Ogle (2001) found that lower student-counselor ratios resulted in increased college-going rates for high school graduates, an effect that persists when taking into account socio-economic and demographic differences.

Increasing the amount of time that students spend talking with counselors and teachers about students' plans is associated with increased achievement in mathematics, science, and reading (Kaufman, Bradby, and Teitelbaum, 2000).

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<sup>4</sup> Outcomes studied include factors related to career decision-making such as appropriateness of choice, certainty/decidedness, and decision-making skills and factors related to effective role functioning such as attitude, career maturity, and self concept.



## **Career Networks**

Career networks derive from government, business, and nonprofit and professional organizations. Government career information networks include America's Career Resource Network (Department of Education) and the Occupational Information Network (Department of Labor). Many states have occupational information networks that were organized through the National Occupational Information Coordinating Committee in the eighties and nineties.

In addition to the structures of state and federal government, career networks form around specific career information systems or products such as Choices (Bridges), the Coordinated Occupational Information Network (Coin, Inc.), SIGI Plus (Education Testing Service), the Career Information System (University of Oregon), and ACT Discover (ACT). With the common interest of improving career information products and services, these networks provide professional oversight and bring knowledge of end users' experiences with their respective products and services.

Professional organizations that embrace career information and career development include the National Career Development Association, the Association of Computer-based Systems for Career Information, the Career Education Association, and the American School Counselor Association.

Functioning independently, but often in concert, the career networks strengthen career information and career development through professional development and the establishment of professional and ethical standards, through audience analyses and needs assessments, through guidance for professionals in what constitutes developmentally appropriate career development, and through research sponsorship and dissemination. In sum, the networks create a professional culture around career information and career development. It is in the context of this culture that the value of career information is magnified exponentially.

Often, government investments in career interventions are viewed as costs to be justified by measurable macroeconomic returns: increased employment, improved educational attainment or achievement, gains in income, etc. Herr (2002) points out that career development professionals are often viewed as consumers of such investments, when, in fact, they are also producers. Career development professionals take career information and embed it into career information systems, and into career information processes such as career education, career guidance, and career counseling services. Career networks add further value through improving practice. Any cost/benefit analysis of career information and services must consider the value added to public and private investments by the array of career development professionals who create information systems, processes, and networks that facilitate *informed and considered career decisions*.



## Measurement Issues

Career information is embedded in systems, processes, and networks. As the complexity of its context grows, the value and effect of career information also grows. The amount of return on investment is very difficult to measure. How much value accrues to a ten-dollar wrench in the hands of an experienced mechanic? In the hands of an experienced mechanic at a top-notch repair shop? In the hands of an experienced mechanic at a top-notch repair shop that is part of an international network of technical support? Do you count the value of every car the mechanic repairs? The engine damage prevented? The value of jobs kept because of reliable transportation?

As with most social phenomena, it is neither possible to grasp all of the inputs of the career development process nor all of the outputs. It may not be possible to generalize returns from one audience to another. The number and intensity of interventions vary as do the professionals who apply the interventions. Although there is considerable outcome research to review, studies often focus narrowly on specific audiences and specific outcomes. Much research is concentrated on high school and college students. Even so, a rich tapestry of professional research reveals that career development processes produce intended outcomes in direct relation to the quality, number, and frequency of interventions. These outcomes contribute to *informed and considered career decisions*.

The following sections shed light on the educational, social, and economic value of *informed and considered career decisions*. Although it may not be possible to measure value with precision, it is possible to assert that value is of significant dimension.

### Findings: The Educational Value of *Informed and Considered Career Decisions*

- **Improved educational achievement**

The U.S. Department of Education published studies of comprehensive guidance programs in Missouri and Utah (Maddy-Bernstein, 2000). These studies provide strong evidence of the effectiveness of secondary school career development programs. Students had higher test scores on the ACT exam, enrolled in significantly more Advanced Placement classes, and were more likely to enroll in Utah's early graduation scholarship.

Blustein (2002) notes that researchers and policy analysts are linking educational development and career development (Gysbers and Henderson, 1994; Marshall and Tucker, 1992; Resnick and Wirt, 1996). There is an emergent understanding that students who have an awareness of the career relatedness of education are more likely to engage and achieve in school. Blustein cites two meta-analyses (Baker and Taylor, 1998; Evans and Burck, 1992) and three specific studies that document academic gains from career interventions. Another study of a systematic guidance program (Lapan, Gyspers, and Petroski, 2001) found



that seventh graders had improved attitudes toward education and better grades than students who did not take part in the program.

Dykeman et al. (2003) posit that career interventions lead to increased academic efficacy and motivation, two variables that are known to be related to improved academic achievement. In this study, “academic planning counseling” was found to have a positive influence upon mathematics achievement. The authors speculate that mathematics is particularly susceptible to influence, because counselors can help students understand how mathematics relates to their lives and future plans.

- **Improved preparation and participation in postsecondary education**

Several factors influence postsecondary participation:

- preparing academically through a rigorous program of advanced coursework,
- having intentions for higher levels of education,
- having expectations that one can achieve at higher levels of education,
- participating in a career planning process that articulates goals, steps, and benchmarks,
- receiving supportive guidance,
- having postsecondary information about institutions, majors, financial aid, the college applications process, and support services available,
- getting good grades, and
- being satisfied with the school experience.

Many career interventions address the factors listed above.

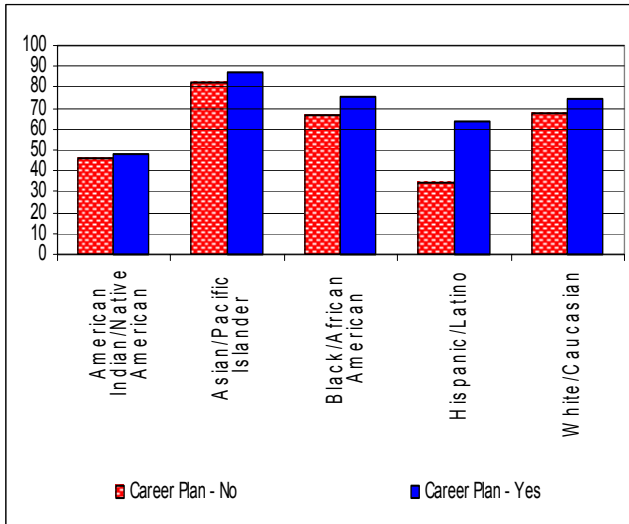
The National [United Kingdom] Institute for Careers Education Counselling (1999) reports various studies that indicated positive effects of career education on student intentions for and participation in higher education.

Hughes et. al (2001) found that School-to-Work participants were well prepared for college and the world of work and just as likely to attend college as comparable students.

The Indiana Career and Postsecondary Advancement Center (2002) found that having a career plan by the beginning of the high school junior year is associated with better grades, participation in more academically rigorous curricula, and a greater likelihood of expecting to complete four or more years of postsecondary education. Latino students who have completed career plans are twice as likely to expect to complete four or more years of college as Latino students without career plans. For all groups of students, having a career plan is associated with higher levels of educational expectations. See graph on next page.



### Career Plans and Expectations of Four or More Years of Postsecondary Education by Race/Ethnicity



In “Careers Work and School Effectiveness,” Killeen, Sammons, and Watts (1999) conclude that a vast body of evidence shows that career education increases student decidedness about educational options.

Utah students in schools that have highly implemented comprehensive guidance programs choose to take more advanced courses, and female students tend to take more advanced mathematics and science courses. (Maddy-Bernstein, 2000). Advanced academic coursework is highly correlated with postsecondary participation and success. Missouri students reported similar benefits of highly implemented comprehensive guidance programs and reported better grades, higher satisfaction with school, and having received more

information about postsecondary options (Maddy-Bernstein, 2000).

Indiana’s investment in educational and career planning information<sup>5</sup> over a period of twelve years contributed to a 61 percent increase in student movement from high school to college, an improvement in the state’s national ranking on the high-school-to-college continuation rate from 40<sup>th</sup> to 17<sup>th</sup> (Jones, 2003).

A study of tenth-grade students who took a career class based on Crites Career Decision-Making Model showed that participants had fewer career decision-making difficulties and increased their sense of personal direction (Savickas, 1990).

Workers with higher educational attainment are unemployed less and earn more than workers with lower educational attainment (Decker, Rice, and Moore, 1997; Mortenson, 2003).

<sup>5</sup> This state-funded program used direct-mailed newsletters, school-delivered pamphlets and booklets, Internet-delivered publications, and telephone-delivered services to over 300,000 student households annually and approximately one thousand public and private middle and high schools. The change occurred between 1986 and 1998.



- **Better articulation among levels of education and between education and work**

Middle school students who receive career interventions before entering high school are better able to make effective educational decisions in course specificity, sequencing, and appropriateness for postsecondary education (Peterson, Long, and Billups, 1999).

Studies show that career planning interventions by school counselors have a positive effect on students' career development/career plans and that services are effective for a wide range of students, including children with learning disabilities and minorities (Whiston and Sexton, 1998a, in American Counseling Association, 2003).

Career services delivered by “active, caring, and tangibly helpful” guidance counselors are instrumental for students to make adaptive transitions between school and work (Blustein et al., 1997).

Whiston, Sexton, and Lasoff's meta-analysis (1998) found that career interventions have the greatest effect on middle school students.

- **Shorter time to graduation**

Folsom, Peterson, Reardon, and Mann (2002) report that students who take a college career course execute fewer course withdrawals and take fewer courses in order to graduate. A relatively small investment of time may yield substantial time savings. Females who took the career course graduated in an average of 50 months, compared to 61 months for non-participants.

Career academy graduates were less likely to need remedial coursework and more likely to receive their bachelor's degrees than other graduates of the same school district (Maxwell, 1999).

- **Higher Graduation and Retention Rates**

The U.S. Department of Education (1997) reported that Zapata (Texas) High School's exemplary comprehensive and developmental career guidance and counseling program led to a .9 percent dropout rate and a 93.6 percent attendance rate, despite widespread economic disadvantage. This program also reported increased career awareness related to academic content.

Hughes et al. (2001) found that “well-implemented” career academies led to improved attendance and graduation rates, as well as higher GPAs, and may also improve postsecondary efficiency and success.



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

Wood (2003) reports that indirect effects of career interventions include reduced drop-out rates and increased student retention in college.

Nationally known for his work on improving the college freshman experience and raising student retention rates, John Gardner (1998) offers this advice about career development programming for college freshmen:

Career development programming facilitates more appropriate goal setting, academic decision making, and course selection which heighten commitment, which heightens the probability of retention. I believe you should examine ways to involve more of your freshmen in the services offered by your University Career Center in the first semester rather than waiting until a number of semesters later.

Career development strategies also serve as dropout prevention strategies (Herring, 1998).

***Informed and considered career decisions are linked to improved educational achievement, attainment, and efficiency. Students who make informed and considered career decisions are more likely to graduate from high school and to succeed in postsecondary education.***

### Findings: The Social Value of *Informed and Considered Career Decisions*

- **Benefits to family, peers, and community**

Mortenson (2001) cites a litany of social benefits that derive from higher levels of education:

...better access to health care, less dependency on government assistance, lower poverty, longer lifespans, better dietary and health practices, healthier children, greater use of seat belts, more continuing education, greater Internet access, greater attendance at live performances, greater participation in leisure and artistic activities, more book purchases, better academic performance of children, higher voting rates, greater knowledge of government, greater community service, more volunteer work, greater tolerance of unconventional literature, greater community leadership, and less criminal activity and incarceration.

ICCDs contribute to the strengthening of families, and, correspondingly strong families contribute to the career development of their children (Kerka, 2001). A strong familial relationship is a vital foundation for children to make good career decisions. Parental support, understanding, and guidance are crucial to this process. The family helps children to

- Understand the importance of education and training to their future well being
- Know the importance of *planning* their future education and work
- Find the career information and services that help them make *informed and considered career decisions*.



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Feel supported in the process of engaging in career exploration
- Be confident in going beyond their known world and comfort zone

The Organization for Economic Cooperation and Development (2002) calculates the overall rate of return on investments in education, comparing total costs to total benefits. Investments in the U.S. in upper secondary and postsecondary education each result in rates of return between 10 and 14 percent for both men and women. Clearly, there is a powerful economic argument for ensuring that all young people make *informed and considered career decisions*.

*Informed and Considered Career Decisions* may have a more profound effect on people who confront extraordinary challenges to their career development. For people with disabilities, improving the outcomes of transition from school to adult roles is dependent upon a process that is remarkably similar to the career development process described on p. 2. Halpern (1996) describes the essential process for successful transition for students with disabilities:

...transition planning should contain the following steps as part of a decision-making process. Adolescent planners should be able to:

- engage in self-exploration and self-evaluation;
- identify and select personally meaningful transition goals;
- generate a range of possible alternative solutions to meet that goal;
- identify and select appropriate activities for pursuing their goals;
- monitor their progress and make adjustments in their plans, when appropriate.

- **Higher levels of worker satisfaction and career retention**

In the National Career Development Association's (Hoyt and Lester, 1995) survey of adult workers, more than five times as many people indicated that they entered the workforce by chance than by a choice influenced by a career development professional. Although many people make the best of their work situations, chance only rarely leads to "fit."

In two years of providing career assistance advisors, the U.S. Air Force has improved retention among first-term, second-term, and career members (Norman, 2003).

So far in 2001, Air Force Materiel Command retention numbers show 49 percent of its first-term members, 63 percent of second term members and 91 percent of career members are accepting the challenge to stay with the Air Force. That's a 3-percentage point per category average increase.



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

Physicians are among the higher paid and more prestigious occupations; however the *Journal of the American Medical Association* (Landon, 2003) reported that 18 percent of physicians report being somewhat or very dissatisfied with their careers. The cost of preparing to become a physician is enormous for both the individual and the public. To protect such an investment (and similar investments in many other occupations), it would be prudent to ascertain career fit before investing substantial time, energy, and resources.

Career consultant Nicholas Lore reports that few American workers have “elegantly fitting careers.” His consultation approach aims to improve the fit between the individual and the job (one of the outcomes associated with *informed and considered career decisions*). When fit is optimal, workers find numerous indicators of increased job satisfaction, including experiencing work as “a natural expression of one’s talents and personality” and “feeling energized at the end of the work day” (Rockport Institute, 2003).

- **Shorter path to primary labor market for young workers**

Hughes et al. (2001) identify several studies that demonstrate that career interventions enable students to define their career interests and goals for the future.

In a monograph titled “Social Benefits of Career Guidance,” Killeen, Watts, and Kidd (1999) state that career guidance can prevent “false moves into forms of education and training that are unrelated to vocational interests and objectives and which make unanticipated demands, such that educational failure occurs....”

- **Lower incidence of work-related stress and depression**

Stewart et al. (2003) report in the *Journal of the American Medical Association* that workers with depression cost employers an estimated \$44 billion yearly in lost productive time. Reducing the ranks of the depressed by one percent would save employers 440 million dollars annually, and this savings would be accompanied by corresponding savings to the families of the affected employees.

Herr (1998) describes the range of problems that devolve from job stress and unemployment:

Job Stress and the loss of work, particularly involuntary unemployment, has been found to manifest itself in physiological, psychological, emotional, and behavioral problems, and the effects of these are not confined to the person who lost his or her job but ripple through families, spouses, children, friends, and others.



## The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

Bynner and Eggerton (2000) report that postsecondary graduates are at less risk of depression than non-graduates.

In addition to reducing stress and work-related health problems, matching workers with well fitting employment leads to greater productivity and, for both employer and employee, substantial intangible and material benefits.

- **Reduced likelihood of work-related violence**

According to Workplace Violence Headquarters, there are over eight million instances of violence in the U.S. workplace annually, including over one-half million aggravated assaults, rapes, and murders.

Recently, Pennington (2003) in *Counseling Today* reported that career experts cited career frustration and depression as precursors of work-place violence.

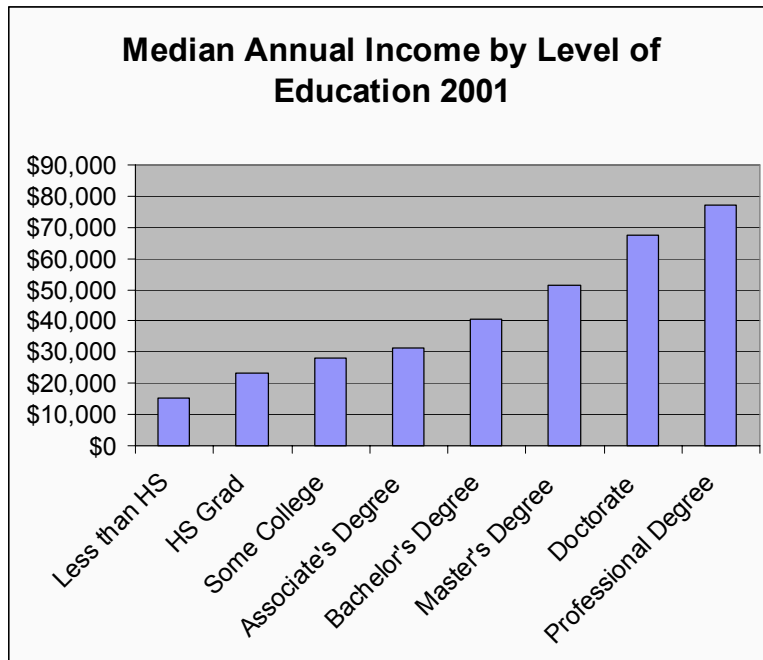
Citing benefits associated with higher education, Bynner and Eggerton (2000) reported that graduates are less likely to be victims of assaults.

***Informed and considered career decisions* reduce the likelihood of occupational mismatch and unemployment, increase the likelihood of career satisfaction, and result in lower incidences of work-related stress and depression.**



## Findings: The Economic Value of *Informed and Considered Career Decisions*

- **Higher incomes and tax revenues**



In 2001, the median income for a bachelor's degree was more than \$17,000 per year greater than the median income for a high school graduate (Mortenson, 2003). Multiplied over a work life of 30 years or more, the additional taxable income is substantial, and it is taxed at a higher rate.

High school students who formulate career plans expect to complete higher levels of education than those who don't (Indiana Career and Postsecondary Advancement Center, 2002). Those with higher expectations *tend to participate in postsecondary*

*education at higher levels* (Hossler, Schmit, and Vesper, 1999). Career plans are required in 47 percent of public high schools in the U.S. (Parsad, Alexander, and Farris, 2002).

Mayston (2002) assesses benefits of career guidance in the United Kingdom. Among the macroeconomic benefits, he cites reductions in occupational mismatch, which increase aggregate demand and gross domestic product.

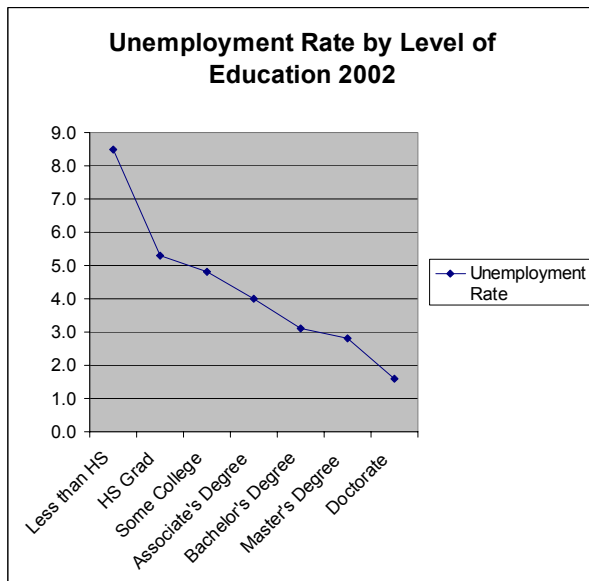
Career plans often are the product of a process of career exploration and decision-making. Students who engage in this career development process learn very quickly that the most desirable occupations require education and training beyond high school and that post-high-school education and training requires significant preparation while in secondary school. High school courses in career decision-making afford career planning opportunities in a larger context of career exploration, assessment, reflection, and action. Parsad, Alexander, and Farris (2002) report that the percentage of high schools that offer such courses declined from 69 percent in 1984 to 57 percent in 2002. In Ohio, more than 90 percent of eighth-grade students complete an individual career plan and about 75 percent of high school students complete individual career plans (Gahr, 2003).

Higher levels of education clearly benefit individuals, but benefits also accrue to families, cities, and society. Mortenson (2001) writes, "By nearly every measure of human welfare, people with more education live better lives than do people with less education."



A recent *JAMA* study reported that income increases reduce behavioral problems in children. Among poor families who received cash payments (shared casino profits), conduct and oppositional defiant disorders occurred at similar levels to families that were never poor (Costello, et al., 2003).

- **Lower unemployment rates and shorter periods of unemployment**



People who make *informed and considered career decisions* complete higher levels of education. A correlate of educational attainment is lower rates of unemployment. The chart below indicates that higher levels of education result in significantly less unemployment (Mortenson, 2003).

Veum and Weiss (1993) reported that (for workers ages 18-27) the duration and frequency of unemployment is a direct function of the level of education - the higher the level of education, the fewer bouts of unemployment and the shorter the duration of unemployment. Allotments for unemployment compensation and benefits for housing assistance, food, and re-employment increase as a function of

unemployment.

Mincer (1993) as cited in Hall (2000) explains why educated workers experience less unemployment: “the more informed the job search, the more likely is a *successful job match* (italics added), hence the longer are workers likely to stay on the next job.”

Mayston (2002) states that career guidance plays a valuable role by providing information about the suitability and availability of career opportunities. Derivative of this increase in human capital are reductions in unemployment and in employment security costs to employers.

Entrants to the labor market face many challenges (high skill requirements, scarcity of jobs, preference for experienced workers, competition from unemployed workers, etc.). A career plan may be the best strategy for successfully engaging young people with work that has the greatest likelihood of success, satisfaction, and (within the limits of a volatile employment context) stability. Such a plan derives its effectiveness from a thorough examination of career information<sup>6</sup>, including consideration of experience and preparation

<sup>6</sup> In this context, career information includes a broad range of occupational information, information about education and training options, financial aid information, information about industries and employers, and information about the career development process.



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requirements and reflection upon the many internal and external factors that mediate appropriateness or fit.

As American women outdistance men in educational attainment, their rates of unemployment are less than that of their male counterparts. According to the Organization for Economic Cooperation and Development (2002a), American women, ages 25 - 64, had lower rates of unemployment than American men.

Killeen, Kidd, and Watts (1999) state that career guidance can “reduce the disaffection, alienation, and despair of long-term unemployment...and can increase self esteem, sense of purpose, involvement in meaningful activity, and social incorporation....”

A consistent finding across many studies over many years is that career interventions are more effective when a career professional is involved (Oliver & Spokane, 1988; Whiston, Sexton, & Lasoff, 1998; Brown & Ryan Krane 2000; Whiston, Brecheisen & Stephens, 2003). Career information becomes much more powerful in the context of career counseling and career education. In many public organizations that provide services to enable employment and re-employment, the long-term trend has been toward fewer counseling services and greater reliance on computerized “customer self service systems.” Such systems, in the hands of an effective career self manager or under the direction of a career professional, provide valuable information and services. Nevertheless, moving most individuals from the status of unemployment to employment will require additional investment in career counseling professionals. Technology may enable the creation of learning modules and computer-delivered support services that limit the need for one-on-one services to those facing the most severe employment challenges.

- **Lower costs of worker turnover**

*Informed and considered career decisions* result in better person-work fit, increased job satisfaction, and diminished chances of occupational mismatch. Having learned about, prepared for, and experienced an occupation prior to committing to it, the employee who has skills to make *informed and considered career decisions* will bring to the workplace much knowledge that informs, guides, and helps the employee to anticipate work requirements, expectations, and the culture of the particular work environment.

Younger employees change jobs and employers with great frequency. Most workers have had between six and eight jobs by age 27 (Veum & Weiss, 1993). The cost of training and orienting employees, the lost productivity of vacant or poorly served positions, and the many costs attendant to an individual’s loss of employment create a strong motivating force for reducing employee turnover.



- **Lower health care costs**

A satisfying career in which one finds achievement, enjoyment, and meaning contrasts sharply with the occupational mismatch that leads to job stress, frustration, and, sometimes, job loss or even violence. As mentioned earlier, Herr (1998) lists the many health consequences of job stress or job loss: physiological, psychological, emotional, and behavioral problems (problems that extend beyond the worker to families, friends, and communities).

Although it is impossible for every worker to be blissfully employed, many workers spend numerous years working before finding their niche. Making it possible for more individuals to make *informed and considered career decisions* could shorten the time (and the attendant health consequences) of occupational mismatch.

By increasing the proportion of employees well-matched to their work, employers would save on health care costs, and families would realize both tangible and intangible benefits. If less money were required for 'vocationogenic' illness, more money would be available for the unavoidable health issues faced by workers and their families.

Research finds considerable evidence that education leads to better health for both the individual and the individual's family. Higher educational status corresponds with improved health status (Wolfe and Zuvekas, 1995). Women with higher levels of education have fewer children outside marriage (Chong-Bum, et. al, 1993).

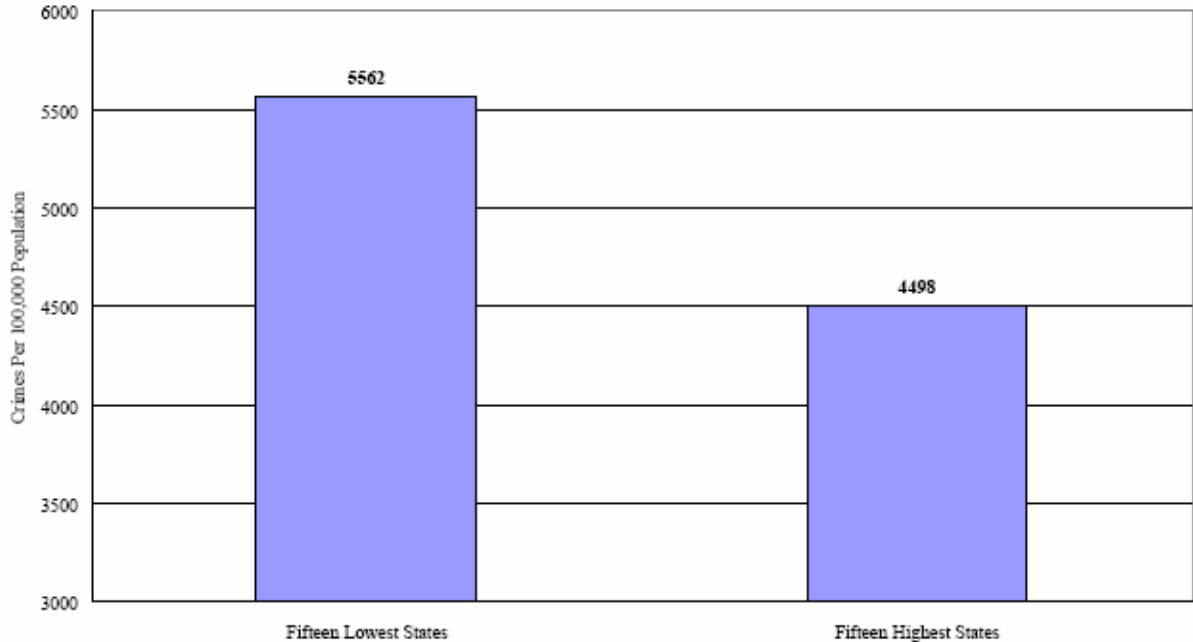
- **Lower incarceration and criminal justice costs**

Reduced unemployment and job stress coupled with increased achievement and self esteem would lead to fewer property crimes and would reduce the incidence of workplace violence. A one-percent reduction in crime would reduce the prison population and would save over one and one-half *billion* dollars per year (Bureau of Justice Statistics, not dated) for direct costs of criminal justice, not including the savings from reduced social work, police, and social welfare costs.

The relationship between crime and levels of education is shown in the following graph that compares crime levels in high-education states and low-education states (Hall, 2000). Simply put, in states where high school graduation rates are higher, crime is lower.



### Comparison of Crime Rates in Fifteen Highest Education States and Fifteen Lowest Education States, 1996



\* The measure of education used is the following: percentage of population 25 years and older with at least a high school diploma.

Sources: *Statistical Abstract of the United States 1998*, Table No. 337 and *State Comparisons of Education Statistics: 1969-70 to 1996-97*, Table 1.

- **Increased worker productivity**

People who make *informed and considered career decisions* make committed and engaged workers. People who make *informed and considered career decisions* have greater ownership of their work roles, persist in the face of adversity, take initiative, and invest in their ongoing professional development. They are better collaborators, more likely to get along with their co-workers and supervisors, and more likely to add value to whatever enterprise in which they engage. All of these qualities add up to increased productivity.

Lore’s (Rockport Institute, 2003) rhetorical question about career satisfaction puts heart into the matter:

There is a close relationship between career satisfaction and material success. People who enjoy their work put their heart and soul into their careers. How much do you accomplish when you are completely immersed in a task that you are really enjoying? Compare this with your productivity when you are forced to do something you don’t want to do.

***Informed and considered career decisions* lead to higher incomes, fewer bouts and shorter durations of unemployment, better matches of person and work resulting in less turnover, better health for the employee and the employee’s family, and fewer instances of work-related stress, depression, and violence, which lead to savings in training, social welfare, criminal justice, and health-care costs.**



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## **Directions: *Informed and Considered Career Decisions* as the Norm**

### **An Imagined Future**

To conclude, let's briefly imagine a world in which *informed and considered career decisions* are the norm:

- More efficient use of education and training resources
- Increased student engagement
- Higher productivity
- Greater job satisfaction
- Less frequent and shorter durations of unemployment
- Higher levels of education and training
- Better fit between individuals and their work
- Less work-related stress, depression, and violence
- Significant savings of public and private resources

Cost savings would accrue in unemployment compensation, employee health care, social welfare programs, education and re-education, corrections, and community mental health. Through more stable career patterns, workers would have more income to invest in their retirement programs, charities, and their children's futures. Communities would have more resources to invest by having to pay for fewer inmates, judges, attorneys, and correctional officers. Children would experience fewer divorces; there would be fewer children growing up in poverty. Workplaces would be characterized by workers who require less direction and correction, who relate to their work personally as well as professionally.

## **Directions: Investing in *Informed and Considered Career Decisions***

Investing in career information and services at a level that ensures universal competency in making *informed and considered career decisions* might be *the* national investment strategy to enable full participation in the Twenty-first Century workplace.

Such investment would ensure that all *students*

- Participate in education with a sense of its importance and relevance to future well-being,
- Formulate a flexible education and career plan prior to commencing high school,



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- Have access to high quality career information and receive career guidance services in the context of a comprehensive school guidance program,
- Participate in a career development program that encourages students to engage in academic rigor and postsecondary education and training, and
- Learn the skills associated with career self-management that can be applied to career transition throughout one's life.

Such investment would ensure that all *workers*

- Have the skills to cope with changing employers, occupations, and skill demands,
- Have confidence in their ability to advance and develop their careers,
- Understand the importance of fit between an individual and the person's work and work environment, and
- Have access to high quality career information and the services of career professionals who can assist with transitions.

\* \* \* \* \*



## References

- American Counseling Association (2003). School counseling services -- research summary. Alexandria: Office of Public Policy and Legislation.
- Association for Career and Technical Education. (2003). The role of the guidance profession in a shifting education system. Alexandria, VA: Association for Career and Technical Education.
- Baker, S., & Taylor, J. (1998). Effects of career development interventions: A meta-analysis. *The Career Development Quarterly*, 46, 376-385.
- Brown, S.D. & Ryan Krane, N.E. (2000). Four (or five) sessions and a cloud of dust: New assumptions and new observations about career counseling. In S.D. Brown & R.W. Lent (Eds.) *Handbook of counseling psychology* (3<sup>rd</sup> ed. pp. 740-766). New York: Wiley.
- Blustein, D. (2002). The relationship between career development and educational development: A selected review of the literature. Boston College.
- Bureau of Justice Statistics, not dated. Expenditure and employment statistics 1982-99. Retrieved October 2, 2003, from <http://www.ojp.usdoj.gov/bjs/eande.htm>.
- Bynner, J., & Eggerton, M. (2000). The Social Benefits of Higher Education: Insights from Longitudinal Data. Centre for Longitudinal Studies, Institute of Education.
- Chong-Bum, A., Haveman, R. & Wolfe, B. (1993). Teen out-of-wedlock births and welfare receipt: The role of childhood events and economic circumstances. *The Review of Economics and Statistics* 75, no. 2.
- Costello, E., Compton, S., Keeler, G., & Angold, A. (2003). Relationships between poverty and psychopathology. *JAMA Journal of the American Medical Association*, 290, 2063-64.
- Decker, P., Rice, J., & Moore, M. (1997) Education and the eEconomy: An indicators report. Mathematica Policy Research, Inc.
- Dixon, K., & Van Horn, C. (2003). The Disposable Worker: Living in a job-loss economy. *Work Trends*, 6 (2). John J. Heldrich Center for Workforce Development. Rutgers, The State University of New Jersey.



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Dykeman, C., Ingram, M., Wood, C., Charles, S., Chen, Meng-Yin; and Herr, E. L. (2001). The taxonomy of career development interventions that occur in America's secondary schools. ERIC Digest CG-01-04. 2001.
- Dykeman, C., Wood, C., Ingram, M., Gitelman, A., Mandsager, N, Chen, Meng-Yin, Herr, E.L. (2003). Career development interventions and academic self-efficacy: A pilot study. St. Paul: National Research Center for Career and Technical Education.
- Ettinger, J.M. (1996). Improved career decision-making in a changing world: Participant's resource guide. Washington: National Occupational Information Coordinating Committee.
- Evans, J., & Burck, H. (1992). The effects of career education interventions on academic achievement: A meta-analysis. *Journal of Counseling & Development*, 71, 63-68.
- Folsom, B., Peterson, G., Reardon, R., Mann, Barbara. The impact of a career course on retention and academic performance (Technical Report 34). Tallahassee, FL: Florida State University, Center for the Study of Technology in Counseling and Career Development
- Gahris, C. (2003). Ohio individual career plan data for 2003. Retrieved Sept.19, 2003, from <http://www.ohiocareerdev.org/fy03data.pdf>
- Gardner, J. (1998). Correspondence with University of Nebraska Lincoln officials. Retrieved Aug.31, 2003, from <http://www.unl.edu/svcaa/priorities/undergrad/gardner.html>
- Gillie, S. (2002). Career information delivery systems. In the online version of *Improved career decision-making*. Washington: U.S. Department of Education Office of Vocational and Adult Education. Retrieved Sept.19, 2003, from <http://www.acrnetwork.org/icdm/topics.htm> - listed as Activity - Accessing State and Local Labor Market Information (CIDS).
- Gillie, S., Buhl, C., Miwa, L., Mollerup, C., Shatkin, L., and Shenk, P. (2002). ACSCI standards implementation handbook. Tulsa: Association of Computer-based Systems for Career Information.
- Grimme, D. & Grimme, S. The realities and options. Retrieved September 19, 2003, from Workplace Violence Headquarters, <http://www.workplace-violence-hq.com/>.
- Gysbers, N., & Henderson, P. (1994). *Developing and managing your school guidance program*. 2<sup>nd</sup> ed. Alexandria, VA: American Counseling Association.



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Hall, Joshua (2000). Investment in Education: Private and Public Returns. Joint Economic Committee, United States Congress.
- Halpern, A.S. (1996). *An instructional approach to facilitate the transition of high school students with disabilities into adult life*. National Center to Improve the Tools of Educators Technical Report #24. Washington, D.C.: U.S. Office of Special Education: Retrieved September 29, 2003 from <http://www.ncset.org/topics/career/research.asp?topic=1>
- Harris-Bowlsbey, J., Dikel, M., & Sampson, Jr., J. (1998). *The Internet: A tool for career planning*, 1<sup>st</sup>. ed. Columbus, Ohio: the National Career Development Association.
- Herr, E. (2003). The future of career counseling as an instrument of public policy. *The Career Development Quarterly*, 52, 8-17.
- Herr, E. (2002). The costs/benefits of career development interventions: A practitioner's perspective. The Pennsylvania State University. Paper presented at the Second International Symposium on Career Development and Public Policy. Vancouver, Canada. Retrieved September 29, 2003, from <http://www.crccanada.org/symposium/background2001.htm>.
- Herr, E. (1998) Some Perspectives on Career Development Theory and Practice Today. Retrieved Aug.12, 2003, from <http://icdl.uncg.edu/ft/022200-02.html>
- Herring, R.D. (1998). *Career counseling in schools: Multicultural and Developmental Perspectives*. Alexandria, VA: American Counseling Association.
- Hossler, D., Schmit, J., & Vesper, N. (1999). *Going to College: How Social, Educational, and Economic Factors Influence the Decisions Students Make*. Baltimore: Johns Hopkins University Press.
- Hoyt, K. & Lester, J. (1995). Learning to work: The NCDA Gallup survey. Alexandria, VA: National Career Development Association.
- Hughes, K., Bailey, T., & Mechur, M. (2001). School-to-work: Making a difference in education. New York: Institute on Education and the Economy.
- Indiana Career and Postsecondary Advancement Center (2002). The Indiana guidance report. Available online at <http://icpac.indiana.edu>
- Jarvis, P. (2003). Career management paradigm shift: Prosperity for citizens, windfall for governments. Pre-publication draft.



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Jones, S. (2003). Report to the Indiana Education Roundtable, May 22, 2003. Retrieved Sept.12, 2003, from <http://www.che.state.in.us/Reports-Studies/reports-studies.htm>
- Kaufman, P., Bradby, D., & Teitelbaum, P. (2000). *High schools that work and whole school reform: Raising academic achievement of vocational completers through the reform of school practice*. Berkeley, CA: University of California at Berkeley, National Center for Research in Vocational Education.
- Kerka, S. Parenting and career development. ERIC digest. Retrieved Dec. 17, 2004, from <http://www.ericdigests.org/2001-1/career.html>.
- Killeen, J., Watts, T., & Kidd, J. (1999). Social benefits of career guidance. National Institute of Careers Education Counseling.
- Killeen, J., Sammons, P., & Watts, T. (1999). NICEC briefing: Careers work and school effectiveness. Cambridge: National Institute of Careers Education Counseling.
- Landon, B.E., Reschovsky, J., & Blumenthal, D. (2003) Changes in career satisfaction among primary care and specialist physicians, 1997-2001. *JAMA*, 289, 442-449.
- Lapan, R., Gysbers, N., & Petroski, G. (2001). Helping seventh graders to be safe and successful: A statewide study of the impact of comprehensive guidance and counseling programs. *Journal of Counseling & Development*, 79, 320-330.
- Lapan, R., Gysbers, N., & Sun, Y. (1997). Effects of Comprehensive Guidance Programs. *Journal of Counseling and Development*, 75, 292-302.
- Lester, J.N. (2001). Cost-benefits of career development interventions: Improving the use - A policy perspective. Paper presented at Second International Symposium on Career Development, Vancouver, Canada. Retrieved September 29, 2003, from <http://www.crccanada.org/symposium/background2001.htm>.
- Maddy-Bernstein, C. (2000). Career Development Issues Affecting Secondary Schools. National Dissemination Center for Career and Technical Education.
- Marshall, R., & Tucker, M. (1992). *Thinking for a living: Education and the wealth of nations*. NY: Basic Books.
- Maxell, N. (1999). Step to college: Moving from the high school career academy through the four-year university. Berkeley, CA: National Center for Research in Vocational Education.



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Mayston, D. (2002). Assessing the Benefits of Career Guidance. Center for Guidance Studies. University of Derby.
- Mortenson, T. (2001). Revisiting the paradox of higher education opportunity in New Mexico. Report to the New Mexico Legislative Finance Committee.
- Mortenson, T. (2003). Earnings by educational attainment 1958-2001. *Postsecondary Education Opportunity*, 129.
- Norman, C. (not dated) Career assistance advisors key to retention battle. Retrieved October 6, 2003, from [http://www.afmc.wpafb.af.mil/organizations/HQ-AFMC/PA/news/archive/2001/jun/HQ\\_CAAfeature.htm](http://www.afmc.wpafb.af.mil/organizations/HQ-AFMC/PA/news/archive/2001/jun/HQ_CAAfeature.htm)
- Ogle, T. (2001). *The Effects of Public School Spending for Instruction and Counseling Services on College Attendance*. Doctoral dissertation, Indiana State University.
- Oliver, L. & Spokane, A. (1988). Career intervention outcome: What contributes to client gain? *Journal of Counseling Psychology*, 35, 447-462.
- Organization for Economic Cooperation and Development (2002). Education at a Glance - 2002. Table A11.2. Retrieved September 29, 2003, from <http://www.oecd.org/dataoecd/8/41/1962701.xls>
- Organization for Economic Cooperation and Development (2002a). Education at a Glance - 2002. Table A11.2. Retrieved September 29, 2003, from <http://www.oecd.org/dataoecd/7/60/1962653.xls>.
- Parsad, B., Alexander, D., & Farris, E. (2002). High school guidance counseling. Washington: U.S. Office of Vocational and Adult Education.
- Pennington, D. (2003). Violence in the Workplace: Employees may benefit from career interventions with MH professionals. *Counseling Today*, Aug. 2003. Retrieved Sept.19, 2003, from [www.counseling.org/ctonline](http://www.counseling.org/ctonline)
- Peterson, G., Long, K., and Billups, A. (1999). The effect of three career interventions on educational choices of eighth grade students. *Professional School Counseling*, 3 (1), p34.
- Peterson, G., Long, K., and Billups, A. (2003). How do career interventions impact the educational choices of eighth grade students? National Center for School Counseling Outcome Research. Retrieved Aug.25, 2003, from <http://www.umass.edu/school-counseling/ResearchBrief1.2.pdf>



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- Reed, C., Lenz, J., Reardon, R., Leierer, S. (2000). Reducing negative career thoughts with a career course. The Center for the Study of Technology in Counseling and Career Development. Retrieved Aug.25, 2003, from <http://icdl.uncg.edu/ft/091001-02.html>
- Resnick, L., & Wirt, J. (1996). Linking school and work: Roles for standards and assessments. San Francisco: Jossey-Bass.
- Revenge of the temps. (2000, Jan. 17). *Washington Post*, H7.
- Rockport Insititute. An interview with Rockport founder Nicholas Lore about career fit and satisfaction. (2003). Retrieved Sept.18, 2003, from <http://rockportinstitute.com>
- Russello, M. (2000). A skills-based employment market. Retrieved Aug.10, 2003, from <http://www.brainbench.com>
- Sampson, J. P., Jr., Lumsden, J. A., Carr, D. L., & Rudd, E. A. (1999). A differential feature-cost analysis of seven Internet-based Career Information Delivery Systems (CIDS): (technical report No. 24). Tallahassee, FL: Florida State University, Center for the Study of Technology in Counseling and Career Development
- Sampson, J.P., Jr. Reardon, R., Reed, C., Rudd, E., Lumsden, J., Epstein, S., Folsom, B., Herbert, S., Johnson, S., Simmons, A., Odell, J., Rush, D., Wright, L., Lenz, J., Peterson, G., Greeno, B. A Differential Feature-Cost Analysis of Seventeen Computer-Assisted Career Guidance Systems: Technical Report Number 10 (8<sup>th</sup> Ed.). Tallahassee, FL: Florida State University, Center for the Study of Technology in Counseling and Career Development
- Savickas, M. (1990). The Career Decision-Making Course: Description and field test. *The Career Development Quarterly*, 38, 275-284.
- Savickas, M. (1999). Career development and public policy: The role of values, theory, and research. In Hiebert, B., & Bezanson, L. (Eds.), *Making Waves: Career development and public policy*. Ottawa: Canadian Career Development Foundation.
- Spokane, A. (1991). *Career intervention*. Englewood Cliffs, NJ: Prentice-Hall.
- Spokane, A. & Oliver, L. (1983). The outcomes of vocational intervention. In Osipow, S., & Walsh, W. (Eds.), *Handbook of vocational psychology*, 2. Hillsdale, NJ: Erlbaum.
- Stewart, W., Ricci, J., Chee, E., Hahn, S., & Morganstein, D. (2003). Cost of Lost Productive Time Among US Workers with Depression. *JAMA Journal of the American Medical Association*, 289, 3135- 3143.



The Educational, Social, and Economic Value of *Informed and Considered Career Decisions*

- U.S. Department of Education. Exemplary career guidance programs. Retrieved October 8, 2003, from <http://www.ed.gov/offices/OVAE/tx3.html>.
- Veum, J., & Weiss, A. (1993). Education and the work histories of young adults. *Monthly Labor Review*. Apr. 1993.
- Whiston, S.C., Sexton, T.L. & Lasoff, D.L. (1998). Career intervention outcome: A replication and extension of Oliver and Spokane. *Journal of Counseling Psychology*, 45, 150-165.
- Whiston, S.C. & Sexton, T.L. (1998a). A review of school counseling outcome research: Implications for practice. *Journal of Counseling and Development*, 76, 412-426.
- Whiston, S.C., Brecheisen, B.K., & Stephens, J. (2003). Does treatment modality affect career counseling effectiveness? *Journal of Vocational Behavior*, 62, 390-410.
- Wolfe, B. and Zuvekas, S. (1995). Nonmarket outcomes of schooling. Institute for Research on Poverty discussion paper 1065-95.
- Wood, C. (2003). New designs for career and technical education: Design review No. 49. In Copa, G. & Ammentorp, *New Designs for career and technical education: Final Report*. Minneapolis, MN: National Research Center for Career and Technical Education, University of Minnesota. Retrieved Sept. 1, 2003, from <http://newdesigns.oregonstate.edu/compendium/Process/design49.htm>