School-Based Career Development: A Synthesis of the Literature

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Abstract

The Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 extended support for "career guidance and academic counseling." A wide variety of such interventions are in existence. Since the No Child Left Behind Act of 2001 emphasizes evidence-based education, it is important to examine the research to determine the value of these programs. This synthesis of the research literature, covering meta-analyses and individual studies on comprehensive guidance programs, career courses, counseling interventions and computer-assisted career guidance, finds many benefits to students of career guidance and academic counseling interventions. On a variety of career-related and academic measures, student subjects did have increased outcomes. However, there are also limitations to the interventions and to the research methods studying them. Many of the interventions are short-term, low-dosage activities, with lasting benefits unclear. In addition, much of the research relies on self-reported responses to psychological inventories. Based on the findings of the research review, recommendations are to focus practice and research on middle-school students, and target resources towards ensuring that all middle- and high-school students have regular conferences with counselors to discuss their current and future academic programs. Finally, research should focus on exploring the relationships between guidance interventions and positive student behaviors, rather than attitudes.

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Introduction

Giving young people the tools and knowledge to realistically plan for their futures is a primary goal of education. Career development is vitally important for today's youth, who are more than ever "motivated but directionless" (Schneider & Stevenson, 1999). Young people have high ambitions, expecting to be highly educated and have professional careers, yet research has found that many do not develop coherent plans for achieving their goals (ibid.). Almost two-thirds of high school graduates enter postsecondary education immediately after high school; yet more than a third of those leave within two years without earning any degree (NCES, 2001). Career guidance and academic counseling can provide students with the necessary tools to set career goals, and give them an understanding of the education and skills they need to meet their goals.

Initiatives and legislation of the 1990s, such as the SCANS (1991) report and the 1994 School-to-Work Opportunities Act, sought to increase career exploration, work-based learning and other related career development activities throughout school, with the goal of assisting young people in developing realistic plans for their futures. According to Mathematica Policy Research's national evaluation of school-to-work implementation, broad career development activities became more widespread in the 1990s (Hershey et al., 1999). However, many school-to-work activities did not include guidance and counseling professionals; they focused instead on teacher-driven partnerships with businesses.

This report examines the effectiveness of career guidance, activities usually carried out by school counselors. The Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 extended support for "career guidance and

academic counseling," defined as "providing access to information regarding career awareness and planning with respect to an individual's occupational and academic future that shall involve guidance and counseling with respect to career options, financial aid, and postsecondary options." As will be shown below, a wide variety of career guidance interventions are in existence. Most pre-date the 1998 legislation and though they are well-established approaches, it is not always clear that guidance interventions attain their programmatic goals. Since the No Child Left Behind Act of 2001 targets federal support towards educational programs shown to be effective by scientifically-based research, it is important to examine the research to determine the value of these programs.

A note on terminology is warranted. Others have pointed out that terms such as career development, career education, career guidance and career counseling are often used interchangeably, as are the basic terms guidance and counseling (Maddy-Bernstein, 2000). Advising is another term that is increasingly being used. This report will use the following definitions, endorsed by professional organizations (ibid.):

> *Guidance* — an umbrella term encompassing many services aimed at students' personal and career development.
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> *Career guidance* — the portion of the guidance program focused on students' career development; this can include career counseling (below) or other career-related services .
>
> *Career counseling* — the portion of the guidance program in which trained professionals interact with students to assist them with their career development.
>
> *Academic counseling* — as quoted in the Perkins legislation, is also often referred to as academic advisement. This generally refers to trained professionals counseling students on their academic plans, for course-taking while in secondary school as well as for postsecondary education.

This report does not address research on school-based psychological counseling, or what is referred to as responsive services, remedial services for students facing

problems (Gysbers & Henderson, 1994). Nor does it address research on work-based learning career development activities (see Hughes, Bailey, & Mechur, 2001, for a review of research on school-to-work programs). According to the taxonomy of career development interventions devised by Dykeman and his colleagues (2001) in an effort to standardize career guidance language, our focus is primarily on advising and curriculum-based interventions. The former include those designed to provide direction and planning skills to students; the latter are interventions, such as career courses, designed to promote student knowledge and skills relevant to the world of work.

Background[1]

The guidance profession got its start at the turn of the 20th century with the compulsory education movement. Vocational education in general was strongly supported at the time, as high schools became institutions for the masses that required training for their future industrial roles. Hence early guidance and counseling were vocational in nature, with the additional aim of assisting new Americans in entering the workforce. The father of the vocational guidance movement, Frank Parsons, became known for applying a more scientific model to career guidance than had been done previously. His systematic method of vocational assessment was the following:

> In a wise choice of a vocation, there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts (as quoted in Phillips & Pazienza, 1988, p.2).

Lazerson and Grubb (1974) point out that the vocational education movement began the trend toward student "differentiation" — tracking — and early guidance professionals and the testing instruments used by them served to administer this system. Individual psychological assessments were refined and became prevalent during and after World War I. The tests were first used to assess draftees, and later seen as tools for the educational system. Thus career guidance at this point meant the assessment of individual differences by "experts" who would determine the person's best occupational direction (Phillips & Pazienza, 1988).

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[1] Some of the information in this section comes from Krumboltz & Kolpin, 2003.

The 1920s and 30s saw an expansion of counseling roles from the strictly vocational to the social, personal and educational. The post-World War II era saw a trend away from testing, as counseling theory argued for a more client-centered approach. Super introduced "vocational development" as a concept (1953), arguing that occupational choice was a process and not an event. Thus the earlier deterministic perspective on career decision-making began to yield to a more developmental view, giving the individual more agency. The diversification of the school counselor's role continued in the 1970s, with the special education movement. The role of counselors increasingly focused on serving the needs of disabled and special education students.

In a reaction against the prevailing model of school-based guidance as a service offered by a counselor, the Comprehensive Guidance Program model was developed in the early 1970s at the University of Missouri-Columbia (Gysbers, 1997). It has since been refined several times. The new model of guidance was as a structured program, not an individual-level process. In the 1980s, the model was increasingly used by state departments of education and implemented in local school districts.

The National Career Development Guidelines were released in 1989, and represented consensus among the government and leading career counseling organizations as to what is necessary to foster excellence in career development. The framework outlined the organizational and personnel requirements necessary for effective comprehensive career development, as well as the specific competencies career development programs should be instilling.

Since the 1990s, national reforms have not emphasized guidance. The work-based learning reforms promoted by the 1994 School-to-Work Opportunities Act often did not

involve guidance staff, and the current policy focus is on academic curriculum and teaching. The Department of Education has recently proposed revising the National Career Development Guidelines in order to bring the Guidelines into alignment with the goals of the No Child Left Behind legislation (U.S. Department of Education, 2003). While the Perkins legislation does continue to provide federal funds for career guidance, school-based counselors are increasingly spending their time on other activities.

Thus during the century that guidance in general, and career guidance in particular, has existed in schools, counselors' roles have shifted and become more diverse. The report of the recent National Center for Education Statistics (NCES) survey (Parsad et al., 2003), *High School Guidance Counseling*, that analyzes guidance programs in a representative sample of public high schools, lends evidence to this trend. Almost half of the respondents stated that helping students with their high school academic achievement was the most important goal of their guidance program, compared with just over one-third of schools responding in 1984. And in the 2002 survey, only eight percent of schools said that their most emphasized guidance goal was helping students plan and prepare for their work roles after high school.

In addition, when asked about the activities that take up more than 20 percent of guidance staff's time, the most-often cited activity (with almost half of the schools naming this activity) was assisting students in their choice and scheduling of high school courses. The second-most-commonly cited activity was postsecondary admissions and selections, and one-third of the schools said that dealing with student attendance and discipline took up more than 20 percent of their guidance staff's time. Knauth and Makris (2000) argue that the distribution of counselors' time contributes to the creation of "an

index of the opportunities those schools give their students to learn about the steps they need to take to move from high school into college or the workplace" (p. 169).

While it appears that high school counselors are not spending much time directly engaged in assisting students with career planning, the NCES survey (Parsad et al., 2003) shows that guidance programs are generally equipped with tools students can use on their own. The vast majority of schools stock computerized and non-computerized career information sources and college catalogues, as well as conduct testing for career planning.

As counselors have taken on roles other than career counselor, additional school staff are expected to participate in students' career development. In the NCES survey, the majority of schools reported having a "team approach to career development," and this approach was the most commonly cited among a list of program features as having a positive effect on the school's ability to deliver guidance services. For example, counselors may involve parents in the guidance program, or work with teachers to embed guidance activities into the academic curriculum.

Below, we present evidence regarding the effectiveness of a variety of career guidance and academic counseling interventions. First, we describe our methodology in conducting our review of the literature and preparing this report. We then turn to the research findings, which are presented in five categories: meta-analyses, comprehensive guidance programs, career courses, counseling interventions and computer-assisted career guidance. Finally, we draw conclusions from the findings across intervention types and offer suggestions for future research, policy and program implementation.

Methodology

For this report, we reviewed more than fifty studies, and we have included a complete bibliography.[2] In compiling the list of studies to review, we consulted with the staff of the National Training Support Center (NTSC) and the Directors of America's Career Resource Network (ACRN), as well as researchers and practitioners in the field. We conducted a literature review, using ERIC and other electronic databases, as well as bibliographies from journal articles. We attempted to collect all known published articles on school-based guidance and career development, defined broadly. We sought to ensure that we were not overlooking any relevant research by comparing our final bibliography with those of other published literature reviews and meta-analyses, and by consulting with relevant experts.

CRITERIA FOR STUDY INCLUSION

The literature in this area goes back many decades, thus we had to determine a cut-off date for our search. We found two meta-analyses of the research on career interventions, covering literature published through 1982 (Oliver & Spokane, 1988; Spokane & Oliver, 1983). These studies were frequently cited in later work and were clearly well done and important within the field. Thus, we briefly summarize the findings of these meta-analyses, and in our more detailed presentation of evidence we focus on research published from 1983 forward.

Every article was reviewed for content, research methodology and evidence of impact. We wanted the report to include only those studies that focused on either

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[2] The bibliography includes all literature consulted for this report; not all the references are highlighted in the report.

program outputs or program outcomes. Folsom and Reardon (2000) define program outputs as the skills, knowledge or attitudes that students develop through their participation in an intervention. Examples of program outputs include vocational identity and self-efficacy. Outputs are assumed to influence program outcomes, which are defined as the actual results of an intervention, such as grade point average, job performance or personal adjustment.

The first step in the review was to eliminate articles that focused on program implementation or staff development, rather than outputs or outcomes. Articles that did not include academic or career-oriented outcomes, and articles reporting on interventions that were not school-based were eliminated. In this way, we were able to focus our review on those articles that clearly addressed the question under study: *Is there evidence that career guidance programs influence students' academic and vocational achievement?*

After ensuring that our sample included only studies that focused on outputs and outcomes, we analyzed the studies' methodologies for their appropriateness and rigor. We wanted to include only those studies that used scientifically-based methods and that would enable us to say with some confidence that any changes in outcomes were the result of guidance interventions, rather than external factors. Ideally, we would have liked to include only those studies that adhered to the "gold standard" of research, the random assignment design (see, for example, Whitehurst, 2003). In such studies, subjects are randomly allocated into an experimental group (that receives the intervention under study) and a control group (that does not receive the intervention). If this process is

completely random, then any systematic differences between the two groups can be confidently attributed to the treatment received by the experimental group.

Unfortunately, random assignment studies are difficult to come by in the educational research literature and in the career guidance literature in particular. In part, this is because random assignment studies are time-consuming and expensive. It also seems ethically questionable to deny students an intervention that might help them achieve at higher levels than they would without the intervention. Since comprehensive career guidance programs are by design meant to be administered to entire school populations, random assignment is particularly unrealistic, as students are not randomly assigned to the schools they attend.

In the absence of random assignment evaluations, researchers aim for methodology that enables them to control for, as much as possible, any external factors that might influence the outcome under study. Generally, this is done by creating a comparison group. A comparison group may be constructed in a number of ways. In some cases, evaluators choose a comparison group that shares similar characteristics to the treatment group, such as parental education, that are believed to contribute to outcomes such as GPA. In other cases, evaluators study a sample of students, some of whom are in the program, and use statistical techniques to control for other characteristics that might influence the outcomes. These types of approaches are common in the guidance literature, for example, when researchers compare a class of students engaged in a one-time or experimental guidance intervention with a similar class of students not in the intervention. In these cases, it is important to ensure that, other than the career development intervention, the two classes are similar on measures that might influence

the outcome under study, for example, prior GPA, language skills or knowledge of college and careers.

Often, a research design is used that measures the outcome under study before the intervention is implemented and then again afterward. A survey of career knowledge would be administered to two groups of students, for example. Then, one group (the experimental group) would receive the guidance intervention while the comparison group does not, and the two groups would be surveyed again. If the outcome under study improved for the experimental group between the two surveys, but not for the control group, the researcher could assert that the change was due to the intervention itself, not other experiences. This pre-/post- design enables researchers to be sure that students were similar on outcome variables prior to the intervention, thereby minimizing the risk that any findings are spurious or the result of unmeasured characteristics or experiences.

The validity of these non-randomized approaches is based on the extent to which the evaluator can take account of all of the characteristics and factors, other than the intervention itself, which might influence the outcome measures. Problems arise if the evaluator does not know to include a particular characteristic or, more seriously, cannot observe or measure a crucial factor. Unobserved differences are particularly serious if those differences are also important in determining who participates in the program. The influence of motivation is an example. If more motivated students are more likely to take the initiative to enroll in a program, then it might be the motivation that accounts for any positive outcomes (compared to outcomes of non-participants), not any actual program effects. On the other hand, if the process of program enrollment selects for characteristics that might be negatively associated with the outcomes, then this selection problem would

be less serious. Although, in theory, all students in a school, regardless of motivation, can participate in comprehensive guidance programs, it is possible that some interventions attract students who are already more interested in and motivated to explore college and careers than their peers who do not participate. Program evaluators must be cognizant of this possibility and find ways to ensure that such differences do not color their findings.

Thus, in choosing which studies to include in our review, we eliminated those studies that did not adequately control for external variables that might influence the outcomes. We highlighted only those studies that created reasonable comparison groups and were able to statistically control for any differences among the groups. We particularly emphasized studies using a pre-/post- methodology, although not all of the included studies do so.

Two additional factors needed to be considered in our selection of studies for inclusion in the report: the implementation of the guidance intervention and the appropriateness of the outcome measure under study. When exploring the impact of an intervention, we would hope to study those programs that best exemplify the comprehensive guidance model. If the treatment group does not receive the full intervention, or if the comparison group actually receives some elements of it, the results of an outcome evaluation may be skewed. We therefore looked for evidence that the programs studied were well implemented and that students in the experimental groups received the intended "dosage" of the treatment.

Similarly, we examined the studies under review to ensure that the outcomes they examined fit the interventions under study. It is inappropriate, for example, to expect a career guidance program that focuses on developing an understanding of the world of

work to improve students' test scores in academic subjects. Likewise, it is not clear that a guidance program seeking to enhance students' study skills or motivation would improve their understanding of occupational choices. Thus, we excluded any study that seemed to examine outcomes that were not linked to the intervention itself.

In choosing which studies to highlight in this report, we used four criteria:

- studies that report academic or career-oriented outcomes for students, rather than descriptions of guidance programs or evaluations of program implementation;

- studies that employed a comparison group design *and* were able to control for external influences, either by using random assignment, statistical controls, pre-/post- design or a combination of these features;

- studies that explored the outcomes of well-implemented programs; and

- studies that explored outcomes appropriate for the program under study.

After culling our list of studies to those that were certain to give us a strong indication of the impact that career guidance programs have on student outcomes, we created a chart outlining the focus areas, strengths, weaknesses and findings of each study. Using this chart, we were able to draw conclusions about the influence of career guidance programs on various student outcomes.

MEASUREMENT INSTRUMENTS

It is important to note that counseling psychologists have developed a range of measurement instruments that seek to uncover students' career-related knowledge and attitudes. Many of these instruments measure similar or related aspects of career development, but use different questions or techniques. They also touch on the wide range of possible outcomes career development activities might have. The variety of measures and possible outcomes makes it difficult to assess the overall impact of a given

intervention. For example, even with several existing studies of career courses, it is difficult to assess their effectiveness, because in addition to the courses having varying content, the researchers use different inventories and examine different outcomes. Additionally, the inventories tend to be self-administered, so that many of the studies rely on self-reported data. This is a limitation of the data—self-report relies on respondents' self-knowledge and willingness to answer questionnaires truthfully.

We do not have room to analyze the strengths and weaknesses of each study, but we do report on the nature of the comparisons and the sources of the data in order to give some information on which to judge the conclusions. Similarly, the number of measures and inventories included in this report makes it impossible to describe each in detail. For more detail, readers are encouraged to consult the original studies.

Findings

A number of meta-analyses have sought to determine the overall influence of career development interventions on student outcomes. In conducting a meta-analysis, researchers gather as many quantitative studies on the subject of interest as possible, and use them to calculate an effect size for the intervention. This effect size is essentially the amount of change in subjects' outcomes that can be attributed to the treatment. Meta-analysis is a useful way to draw conclusions from a large number of studies on the same topic, because they tell researchers if, in the aggregate, subjects have improved outcomes as the result of an intervention. In the case of career guidance, effect sizes measure how much "improvement" on a career development measure can be attributed to guidance activities. However, this approach often masks important differences among studies and interventions, such as variations in treatment intensity that could influence the overall outcomes.

Despite their shortcomings, meta-analyses are an important way to provide a general sense of the effectiveness (or lack of effectiveness) of an intervention. As we reviewed the career guidance literature, two meta-analyses were repeatedly mentioned. These studies, well-regarded for their strong methodology and useful findings, give evidence that, as a whole, career guidance interventions can positively influence students' career development. The first of the two studies (Oliver & Spokane, 1988) has become a seminal piece of literature. It reviews studies published between 1950 and 1982, and so is quite dated. Nonetheless, it offers a comprehensive look at the outcomes from a large body of research evidence. Additionally, the authors sought evidence that different

guidance interventions had different effects for students; their findings offer some preliminary direction for practitioners about which guidance interventions might be most effective.

Oliver & Spokane (1988) found generally positive effects. By and large, treatments positively influenced subjects' career decision-making, understanding of careers and career-related adjustment. They also found that the type of intervention contributes to outcomes. Perhaps most interestingly, they found that guidance activities directed at junior high school students had the largest effect sizes, indicating that guidance efforts may be most effective with pre-teenage (rather than high school or college) students. They also found that individual counseling was most effective in terms of its cost-per-hour but that when the cost of a counselor's time is taken into account, the most cost-effective type of intervention is a small-group workshop. Finally, they found that career interventions have the most impact on the development of career decision-making skills, as compared to other possible outcomes (such as career-related knowledge or career-related self-concept development).

The study also recognizes some limitations in career guidance interventions and research. First, over half the interventions had only one or two treatment sessions, indicating that, in general, career guidance is a short-term, low-dosage activity. Secondly, half the studies involved college students and another quarter involved high school students. This could result from the focus of career guidance programs on older youth, or from the easier access researchers have to college students than younger students. The finding that younger adolescents may benefit the most from career guidance should be heeded and future research aimed at middle school students.

A decade after Oliver & Spokane published their meta-analysis, Whiston, Sexton & Lasoff (1998) offered an updated study using the same methodology. Their meta-analysis sought to replicate Oliver & Spokane's findings with more recent research. They reviewed 46 studies published between 1983 and 1995. They, too, found that career guidance interventions have a positive (though moderate) effect. They also found that interventions were successful with most age groups. Paralleling the findings of Oliver & Spokane (1988), they found that the effect sizes were largest for those interventions targeting junior high school students. Counseling interventions were the most effective type, and the interventions with the largest effect sizes were those that focused on a specific career-related skill, rather than "career preparation" generally. Like Oliver & Spokane (1988) before them, Whiston, Sexton, & Lasoff (1998) noted that most interventions included in the meta-analysis were short: Nearly half of the interventions included less than four hours of treatment.

COMPREHENSIVE GUIDANCE PROGRAMS

The Comprehensive Guidance Program model was developed and has been evaluated by Norman Gysbers and his colleagues. The model, which provides the features for a comprehensive, developmental guidance program, has been implemented in many states and districts. It consists of three elements: content, organizational framework and resources (Gysbers, 1997). Content refers to the desired student knowledge and skills, or, more specifically, self-knowledge and interpersonal skills; life roles, settings and events; and life career planning (ibid.). Organizational framework refers to the structural components of the program, or how the program connects to other school

programs and what are its principles and goals. Organizational framework also encompasses the four program components: guidance curriculum, individual planning, responsive services and system support. Finally, the human, financial and political resources necessary for the model's functioning are outlined.

The American School Counselors Association has developed a national model that builds on Gysbers' comprehensive model. In general, the goal is now for guidance to be an integrated program within a school and serve all students through a mix of interventions. A positive development can be seen in the NCES survey (Parsad et al., 2003), in which a majority of the schools reported a "team approach to career development"; and cited this approach as having positive effects on the school's ability to deliver guidance services.

What does the research say about the impact of implementing comprehensive guidance programs? Four studies were found: two examining the impact of comprehensive guidance programs on students statewide in Missouri; one evaluating a combined guidance and language arts program in one school; and one analyzing the implementation of comprehensive guidance programs in Utah. While each study has limitations, they do show some positive relationships between comprehensive guidance programs and principles and students' grades and career development.

- Lapan, Gysbers, and Sun (1997) used data from 236 Missouri high schools to explore the relationships between counselors' ratings of the implementation of comprehensive guidance programs in their schools and students' ratings of their own academic achievement, career development, liking for school and school climate. Controlling for school-level differences in size, socioeconomic status and percentage of minority students, the researchers found that students in schools with more fully-implemented guidance programs reported:

    o having higher grades;
    o being better-prepared for their futures;

- having more college and career information; and
- believing their school has a more positive climate.

- Lapan, Gysbers, and Petroski (2001) used data from seventh-graders and teachers in 184 Missouri middle schools to examine relationships between teachers' ratings of guidance activities in their schools and students' perceptions of safety and success, and again controlled for school-level differences. Students in schools with more fully-implemented guidance programs reported:

  - feeling safer in school;
  - having better relationships with their teachers;
  - believing their education was more relevant;
  - being more satisfied with the quality of their education;
  - having fewer problems related to their school environment; and
  - earning higher grades.

- Lapan, Gysbers, Hughey, and Arni (1993) evaluated a guidance and language arts unit that was developed to meet comprehensive guidance program guidelines for high school juniors in one high school. Participation was associated with several positive effects:

  - an increase in scores on the Vocational Identity scale;
  - girls gained a greater understanding of the relationship between gender and careers; and
  - girls who met specified career development competencies through the unit earned higher English grades; this was true for both honors and non-honors-level female students.

- Nelson, Gardner, & Fox (1998) used data from 14 Utah high schools to examine relationships between the level of implementation of comprehensive guidance programs in those schools and a number of variables reported by students. Comparing data from high-implementation and low-implementation schools, the researchers found that:

  - students in high-implementation schools were statistically significantly more likely to be completely satisfied with guidance services than students in low-implementation schools.

CAREER COURSES

Career courses are common guidance interventions. Career courses differ from other interventions because they are longer and provide opportunities for in-depth study

and hands-on career experiences, such as role-playing or even job shadowing. Unlike shorter interventions, career courses also frequently take a developmental approach to career guidance. This means that they seek to gradually build students' knowledge and skills, offering progressively complex information and decision-making strategies.

Career courses vary in their goals, format and pedagogy. They frequently aim to expose students to a variety of career options and the academic requirements for those options, as well as engage them in decision-making processes that can help them choose among various career options. Courses are usually taught by guidance counselors or counseling psychologists. Students of all ages, from kindergarten through college, may participate in career courses, since the curricula are usually targeted to students' age-specific developmental needs. The NCES survey of high school guidance counseling found that 57 percent of public high schools offered courses in career decision-making; however, this was the least available of 16 guidance activities examined in the survey. In 2002, 27 percent of students in public high schools participated in such courses (Parsad et al., 2003, Table 8).

Career courses can be delivered in a variety of ways. At the postsecondary level, they are usually stand-alone elective classes offered for credit. These courses are primarily aimed at students who are undecided on their academic major; students enroll in the courses voluntarily or at the suggestion of a counselor. For younger students, career courses are usually delivered during regular class time, as a unit in another class such as health or English. While exposing students to career options and helping them increase their career-related identities and decisiveness are goals for these courses, many career courses targeted at younger students also seek to improve students' academic outcomes,

under the assumption that a better understanding of careers will motivate students to take challenging courses and improve their grades.

There is some overlap between career courses and group counseling interventions. It is not always clear—particularly if the intervention is not offered for credit or as part of a school course—how to distinguish between the two interventions. In particular, those career guidance activities that occur outside of regular classroom experiences, but which last for a number of weeks or months and include a developmental approach, could be placed in either category. For the purposes of this report, we define any intervention that builds students' career-related knowledge through engagement with a structured curriculum as a career course, regardless of its credit-bearing status.

A problem in evaluating the effectiveness of career courses is the range of possible interventions and outcomes included in the category. Additionally, even courses with the same goals can vary greatly—different outcomes may result from differences in teacher quality or classroom atmosphere (Folsom & Reardon, 2000). Variation among instructional approaches or in adherence to the curriculum may also lead to a range of outcomes for the "same" intervention. Thus, it is difficult for researchers to tease out the effects of career courses and to determine which features of the courses are responsible for any positive findings. Some positive findings were:

- A study of a career exploration class for high school seniors found that participants increased their scores on an inventory of career orientation, indicating that they engaged in increased career planning and career exploration (O'Hara, 2000).

- Middle school students participating in the Real Game (a series of role-playing activities) increased their knowledge of work and occupations, as compared to a group of students who did not participate (Killeen, Edwards, Barnes, & Watts, 1999).

- A year-long career course engaging middle school students in six-week units on various careers promoted both academic and career-related growth (Fouad, 1995). Students participating in the course:

  - increased their knowledge of careers, although the increase was predominantly among white students, rather than minority students;
  - increased their self-esteem;
  - were more likely to engage in careful academic planning (as evidenced by their enrollment in magnet high schools) than comparison group students; and
  - showed improved math and science grades, when compared to a control group.
  - Minority students who participated in the career course were more likely than minority students in the comparison group to enroll in algebra or higher-level math courses in high school; and
  - white male students participating in the career course were more likely than their peers in the comparison group to take advanced science courses in high school.

- High school students who took a career-decision making course had less career-related indecision at the end of the course than did a comparison group (Savickas, 1990). Participants also improved their long-term perspective as compared to the comparison group, meaning that the career course helped them understand the relationship between the present and the future, and to plan for and be motivated to achieve long-term goals.

- Completion of a career course facilitated the career planning of college students in science and engineering fields (Lent, Larkin, & Hasegawa, 1986):

  - at the end of the course, participants exhibited less career indecision, while a comparison group had no change in their level of indecision;
  - participants improved their knowledge of their own interests, values and talents; and
  - students increased their information-seeking behaviors after completing the course, while a comparison group did not change their behavior over the same time period.

- College students completing an intensive three-week career course focused on developing career-related decision-making skills increased their career decidedness, as compared to similar students in a control group (Brusoski, Golin, Gallagher, & Moore, 1993).

- A six-week career course teaching college undergraduates about a career-related decision-making model helped participants increase their career maturity, such that they had higher scores than a comparison group in terms of their orientation

toward work, goal selection and involvement in choosing a career (Sherry & Staley, 1984).

- Participants in a high school career course saw small but statistically significant increases in both their career decision-making and vocational skills self-efficacy, indicating that they felt better able to make career-related decisions and perform career-related tasks than a comparison group, and these gains were maintained over time. Students in the course also increased their expectations that they would obtain a satisfying career, although these gains did not last after the course ended (McWhirter, Rasheed, & Crothers, 2000).

COUNSELING INTERVENTIONS

Counseling interventions may include group or individual sessions with a counselor. As noted, we included research on group sessions that followed a curriculum in the section on career courses. Other available outcomes research on counseling interventions focused on individual counseling, and, more specifically, individual academic counseling. One study comparing different levels of a group counseling intervention is included below.

The NCES guidance survey (Parsad et al., 2003) found that, of the 16 guidance activities examined, public high school students are most likely to participate in individual counseling sessions, with 78 percent of students participating in 2002. We do not know the length or nature of these sessions, but the NCES also reports that high school counselors spend a great deal of their time helping students choose and schedule their high school courses, and helping with their postsecondary applications. Hence it is likely that for high school students, individual counseling sessions focus on the type of "academic counseling" supported by the Perkins legislation: planning with respect to students' academic futures.

Four studies were found on individual counseling, all addressing high school students. Three of the studies were conducted on students in High Schools That Work (HSTW) schools. HSTW is a comprehensive school-reform initiative that aims to improve the achievement of the middle range of students with a high-level curriculum that includes technical as well as academic coursework (SREB, n.d.). In addition to the upgraded curriculum, HSTW recommends that schools implement 10 practices that contribute to student achievement. One of these practices is guidance, which is defined as involving every student and his or her parents in a guidance and advising system. The fourth study surveyed high school seniors from 20 geographically diverse high schools. It asked the students about their participation in a number of different career development interventions, and had them complete a Student Opinion Survey to measure self-efficacy and motivation with regard to their academic subjects.

It is interesting that, while none of the four studies focused exclusively on counseling — the HSTW studies examined student achievement generally while the fourth study examined a number of different career development interventions — they all found positive effects for academic counseling (also called advising). The fifth study highlighted below, though with a smaller sample and not longitudinal, also showed a positive effect of academic planning.

- Over a two-year study period, an increase in the percentage of students in a HSTW school that said they received help in developing a four-year educational plan, by either a teacher or guidance counselor or both, was significantly related to an increase in mathematics test scores (Frome, 2001).

- Kaufman, Bradby, & Teitelbaum (2002) asked students in HSTW schools how much they had talked with a guidance counselor or teacher about planning their school program. Students could respond not at all, somewhat, or a great deal. The researchers found that, over the two-year study period, increases in the amount of

time students talked with counselors or teachers about their program had a positive effect on science, math, and reading assessments.

- Researchers studying rural HSTW schools found a positive relationship between the amount of guidance received from counselors in planning students' high school program and the number of college-prep math and science classes students took (Frome & Dunham, 2002).

- Dykeman and his colleagues (2003) asked students to report their participation in 44 career development interventions, as well as to complete a Student Opinion Survey. The researchers divided the 44 interventions into a four-cluster taxonomy, and then regressed the data against academic motivation and self-efficacy variables developed from the Opinion Survey. The only influence found was for the Advising taxa, which included interventions that provide students with direction for planning. Participation in advising interventions increased students' mathematics motivation.

- Peterson, Long, and Billups (1999) compared different levels of assistance given to three groups of 8th graders with planning their high school course-taking. The group receiving the highest level of information — a four-day classroom intervention — was better able to understand the importance of their choice of courses. In general, the study also points out the appalling lack of knowledge 8th graders have of the high school math and science curriculum, again emphasizing the importance of academic advising and planning.

COMPUTER-ASSISTED CAREER GUIDANCE

Computer-assisted career guidance comes in many forms. These programs are used for self-assessment purposes, information access and retrieval, and to teach career decision-making processes. Many descriptions and comparisons of such programs are available; some give criteria by which schools can evaluate the programs (Taylor, 1988). There has been considerable enthusiasm about such tools that can be self-administered, particularly in that they can free counselors from such mundane tasks as scoring career-interest inventories, allowing time for more face-to-face interaction with the student (Gati, 1994). But evaluation research is needed. Because some of the programs combine assessment and intervention, they should be evaluated in terms of the measurement scales

used as well as the impact on users (Meier, 1991). One author cautions that the systems may promote a focus on career selection, rather than broader career development (Taylor, 1988).

Three studies were found that explored the effects of the DISCOVER program, an interactive program that provides self-assessments in interests, values and abilities, and also supplies occupational information on hundreds of occupations, so that users can generate lists of occupations that match their self-assessment information. Two studies used a sample of college students while the third used middle school students. A fourth study examined the effectiveness of CHOICES (Computerized Heuristic Occupational Information and Career Exploration System). Much like the DISCOVER program, with CHOICES students can create a list of career options that meet their interests and aptitudes. The studies' findings included:

- Use of the CHOICES program did increase the career decision-making commitment of university students, as measured by two scales, compared to a control group of students (Pinder & Fitzgerald, 1984).

- Middle-school students who worked with DISCOVER for one hour a day over a two-week period showed significant gains in career maturity, as measured by the Career Maturity Inventory's Attitude Scale, compared with a control group (Luzzo & Pierce, 1996).

- College student volunteers who used the DISCOVER program showed increases in their levels of career self-efficacy, and levels of career decidedness, compared with a control group (Fukuyama et al., 1988).

- Garis & Niles (1990) examined several measures of career development for college students who a) used computer-assisted career guidance in conjunction with a for-credit career course, b) enrolled in the course without computer-assisted guidance, c) used the computer program while enrolled in an academic course, or d) had no career guidance intervention. The researchers found:

  o the treatment conditions resulted in higher scores on most measures, but combining computer-based guidance with a career course did not result in higher scores than the career course alone; and

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- on one measure, computer-assisted guidance alone did not produce an effect significantly different from the control condition.

Conclusion and Recommendations

In general, this review of the career guidance and academic counseling literature has produced many positive findings. Meta-analyses have found positive impacts of career guidance. Researchers have found benefits to students of comprehensive guidance programs, career courses, academic counseling and computer-based guidance systems. However, there are also limitations to these interventions and to the research methods studying them.

With regard to comprehensive guidance programs, much more research is needed. The attempts of Lapan, Gysbers and their colleagues to use statewide data to uncover relationships between the implementation of such programs and student outcomes are admirable. However, their research relies on self-report of variables such as student GPA, which would be better reported through transcripts. In addition, it would be useful to have a conceptual model explaining how the different elements of comprehensive guidance programs might impact students' grades and other variables.

Students do seem to benefit, both vocationally and academically, from participation in career courses. In particular, they seem to increase their knowledge of careers and their ability to make career-related decisions. On most career-related measures, students did see increased outcomes when compared with students not enrolled in a career course. In the one study exploring academic measures (Fouad, 1995), participants in a career course did improve academically. However, there is little evidence that any gains—either academic or career-related—are maintained over time.

The few studies on academic counseling or advising showed positive findings. It is interesting that this very common but rather low-profile intervention, helping students

plan their secondary school program, appears to be valuable according to certain academic measures. And the meta-analyses found that, of the different types of career guidance interventions, individual counseling interventions were most effective. This simple planning intervention may help students understand the connections between their goals and the necessary steps to take towards them. Thus this intervention is potentially very effective, but more research is needed.

Computer-assisted career guidance programs appear to contribute to students' career development, according to some career-focused inventories. However, these interventions were very short-term and the research tended to consist solely of pre- and post-test inventories, sometimes administered less than a week apart. As more than one author pointed out, the level of dosage of some of the interventions was quite low. With such small amounts of treatment, it is unclear what long-term benefits students might gain. It is also unclear whether computer-assisted programs alone or in combination with other interventions are most effective. Some have found that computer-based interventions by themselves fail to match outcomes produced in combination with some other intervention (Meier, 1991), while others have found that adding a computer program to a career course produces no additional benefits beyond the course alone (Garis & Niles, 1990).

One limitation found in common to many of the interventions and the research is that they focus on change in students' knowledge, and even more commonly, their attitudes. Students' actual behaviors were a minor focus, as in the studies that examined the effects of career courses on students' later course-taking, or research examining the relationship between academic counseling and later academic achievement. The element

of time was also a weakness in much of the research. Much like a history test that measures what students have learned in a half-semester of a history course, inventories were used to measure the digestion of career information, or a change in an attitude. In most cases no follow-up research was conducted over time to see the lasting nature of any knowledge gain or attitude change, or the relationship of these with actions taken later.

There is general agreement that career development is a desirable part of schooling, and there is evidence that many different types of career guidance interventions are effective, according to the measures chosen. Yet, the research overall does not help us in determining the optimum content of or method of delivery of career guidance. We have reviewed various interventions, but because of the diversity of goals, methods and measures, a clear direction for policy in this area is still unclear. We can, however, recommend the following:

Other career development activities that are more experiential in nature have been found to positively influence such variables as school attendance and completion. Compared to these types of activities, many of the guidance interventions reviewed seem inauthentic and artificial. Until additional research is done, students should engage in a variety of career development activities that complement one another.

Given the finding that career guidance and academic counseling is potentially very effective with middle school students, a greater investment in these activities in the middle schools should be made, and future research should be focused there as well.

Academic counseling appears to be a straightforward and cost-effective way to improve student outcomes. Resources should be targeted to ensure that all middle- and

high-school students have regular conferences with counselors to discuss their current and future academic programs.

Finally, research should focus on exploring the relationships between guidance interventions and positive student behaviors.

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