White Paper: *Evidence for Career Guidance Cost-Effectiveness*

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Introduction

In these times of tight budgets and requirements for accountability, it is necessary to carefully design and implement a data collection system that will accurately assess the effectiveness of career guidance programs at local, regional, and national levels. There are at least three reasons for engaging in this activity:

- **To keep all stakeholders informed.** The delivery of career guidance interventions involves many stakeholders – students, parents, career advisors/counselors, adults in transition, employers, government agencies, policymakers, and schools and universities. It is important that all of these entities be involved in the planning of these services and in knowing what their cost and effectiveness are. The type of tracking and reporting done for this purpose is typically called *formative evaluation*. The assessment in this case is typically done by collecting data (number of students/clients served, percent of students/clients who avail themselves of the services, percent of students/clients who indicate that the services are somewhat useful or very useful, etc.). Such data are typically collected by questionnaires, log sheets, interviews, and/or focus groups.

- **To improve career interventions.** Another purpose for formative evaluation is to determine what students/clients think about the services being offered, how they might be modified, what additional topics might be included, the effectiveness of those delivering the services, etc. These data would then be used to add, improve, or modify career interventions.

- **To determine whether the outcomes of the services offered justify the cost of their delivery.** This type of data collection and processing is called *summative evaluation*. Its purpose is to compare costs with outcomes, measuring return on investment. This type of evaluation would tackle questions such as "If a program to encourage secondary students to complete secondary school (rather than dropping out) costs $10 per student to deliver, do the economic returns equal or exceed that cost?" In this case data might be collected by comparing, in two similar groups, the percent of students who completed high school and had this intervention with the percent who stayed in high school without this intervention. Assuming that a higher percent of students who participated in the intervention completed high school, the monetary value of their earnings and buying power would be compared to that of the control group. If that monetary value exceeds the cost of the intervention appreciably, the decision might be made to retain, even expand, the intervention due to its contribution to economic growth and efficiency.

Conceptual Models for Evaluating Career Guidance

Though several countries (such as the United Kingdom, the United States, and Canada) have conceptualized evidence-based models to guide the collection of data about the benefits of career guidance, including return on investment, it is difficult to find a model that has been fully implemented in practice. This fact appears to be true due both to the complexity of the task and to the lack of funds to fully implement it. Nonetheless, these models serve as useful overviews of what can be assessed, and for that reason they are described here.

The Mayston Model (United Kingdom)

David Mayston (2002), of the Centre for Performance Evaluation and Resource Management, University of York, developed a model based on the concept of value added to an individual's human capital as a result of the provision of career guidance. In essence, his focus is on the difference between an individual's present net value and his or her future net income that can be attributed to career guidance interventions, especially motivation for the completion of a higher level of education. Embedded in the

concept of value added are important indicators of performance and organizational success as well as the computation of social value added due to the reduction of social exclusion.

In an occasional paper titled, *Assessing the Benefits of Career Guidance* (2002), Mayston provides the following context for his model:

> "The role of career guidance in our present context we take to be threefold. The first is to provide information to the individual career advisee on the monetary and non-monetary payoffs that are likely to result from successfully completing different possible career moves. The second is to elicit information from the individual advisee on their preferences over different possible characteristics of the payoffs, including those relating to quality of life, that are associated with different possible career choices. The third is to assist in assessing the suitability of the individual career advisee for successfully completing the additional training and/or further education or other investment that is required for different possible career moves, based upon information on the individual's skills, talents and aptitudes." (p. 2)

In applying Mayston's formula, an individual's current annual income is discounted by the current typical rate of interest in order to calculate a present value. Future earning-power is hypothesized to be the result of additional skills and abilities gained by the individual through further education. Further education results in increased human capital, whose total is reduced by the cost of that further education and earnings lost while engaging in it. If the calculated future income (plus a then-relevant rate of interest) exceeds the individual's current human capital value, the additional income is considered *return on investment*.

This approach is built upon the belief that career deciders, to varying degrees, will make ill-informed choices without the benefit of the detailed information about work and education options that career guidance provides. The approach also assumes that ill-informed deciders will make choices which will have to be modified because they are not in alignment with interests and abilities, and will therefore, incur higher costs due to changes in majors or school dropout which will decrease their personal human capital. In assessing elements that affect human capital, Mayston contends that quality career guidance protects individuals from Type I and Type II errors. A Type I error occurs if the individual rejects a career choice or move even though it would have been beneficial in increasing human capital. A Type II error occurs if an individual decides to make a career move for which he or she does not have the capability to succeed.

These individuals then incur the investment costs involved in the career move, but do not receive a positive return on this investment. The value of the benefits generated by career guidance interventions is measured by the reduction in the frequency and costs of Type I and Type II errors made by individuals receiving career guidance compared to those which are made in the absence of career guidance.

In addition to this human capital approach to evaluating career guidance, Mayston's model also accommodates the measurement of change in quality of life, contribution through taxes paid, cost of healthcare services, rate of unemployment and government costs, crime and its cost to society, and loss attributed to the mismatch between the skills of employees and those needed by employers.

Model from University of Derby Literature Review

Another model comes from an extensive international literature review undertaken by the Centre for Guidance Studies (CeGS) on behalf of the Department for Education and Skills (DfES), Adult Opportunities Unit, Derby, United Kingdom. The literature review was done by the University of Derby

Career Centre, headed by Dr. Diedre Hughes. Table 1 shows the collection of desired outcomes derived from a large number of studies included in their literature review.

Contextual Factors and Determinants of Information, Advice, and Guidance (IAG)

- Individual: Factors include gender, age, ethnicity, educational attainment, employment status, locus of control, vocational maturity; and information and guidance needs.
- Personal situation: Factors include domestic situation, local labour market conditions, geographic location, and access to IAG services.
- Institutional: Factors include employer requirements, benefit conditions, and school and college policies.

Information, Advice and Guidance

Factors include intensity/duration of interventions/support and types of support available (including whether it is discreet, or integrated into other provisions). Ancillary IAG outputs can include placement into work or learning, advocacy on behalf of clients, and feedback to opportunity providers and other bodies.

Immediate Outcomes

- These can include enhanced knowledge/skills in the following areas: decision-making skills, opportunity awareness, and career management (including the ability to make effective transitions and plan progression).
- Attitudinal change in regard to increased optimism, locus/sense of control, reduced anxiety/stress, and enhanced levels of decidedness.
- Motivation: In regard to work and/or to learning.

Intermediate Outcomes

- Related to job search: improved search strategy for learning and work opportunities, intensity of search, channels/progression routes explored, and duration of search.
- Decision-making: Enhanced behaviour (e.g. ability to cope with, and plan beyond, disappointments).

Longer-Term Outcomes (individual)

- Training & education: take-up of opportunities, levels of attainment, skills match, relevance to employment choice, and duration of study/learning.
- Labour supply effects: impact on wages and labour market entry and withdrawal.
- Job effects: Increased levels of job entry, enhanced career development/progression, performance and productivity improvements.

Longer-Term Outcomes (economy)

- Employers: increased productivity, reduced recruitment and turnover costs, increased flexibility, and improved ability to introduce new processes.
- Learning providers: enhanced learner recruitment/retention and income levels, improved attainment, and improved ability to adapt/tailor provision to meet needs.
- Economy: GDP growth, reduction of skills gap and shortages, lower unemployment, and exchequer savings.

Table 1: Summary of Outcomes Reported in International Studies of Career Guidance
From *The Economic Benefits of Career Guidance* (2002) by Hughes, Bosley, Bowes, and Bysshe, Chapter 2, p. 9.

This model, very different from Mayston's, proposes a variety of immediate, intermediate, and long-term outcomes of career guidance. The long-term outcomes are divided into two categories – those that relate to the individuals benefiting from career guidance and those that accrue to the national economy.

National Collaborative on Career and Workforce Policy and Development (United States)

In 2009, the U.S. Department of Labor created the National Collaborative on Career and Workforce Policy and Development to address the challenge of measuring the outcomes of career guidance in the U.S. The organization's mission is to play a leadership role in advocating for policies and accountability metrics that can be used to assess what the effects of participation in quality career guidance are on indicators of student academic outcomes and workforce readiness. A part of the task assigned to this group was to achieve national consensus on accountability metrics to measure these outcomes.

Table 2 shows three levels of accountability and metrics the group identified. The first level of accountability is the degree to which quality comprehensive career guidance services are being offered to a specific target population and whether prior research evidence supports their quality. The second level relates to the degree to which career guidance services were delivered with "fidelity and efficiency." The third level relates to the degree to which career guidance services can be demonstrated to have had an immediate and long-term impact. The proposed impact areas include placement, retention, skill Improvement, earnings, and return on investment. Placement refers to whether a person has entered post-secondary education or is attending workforce readiness courses or training programs. The impact of the latter is indicated by the types of courses being taken and the credential or degree program individuals plan to complete. A direct economic value can be calculated for credential/degree programs because the median income levels for various credentials and degrees are available and can be used to calculate future anticipated earnings.

Accountability Type	Metrics for Consideration
1. Quality of career guidance services	Range of career guidance activities. Empirically supported methods. Range of learning experiences. Incorporation of ILPs (Individual Learning Plans).
2. Fidelity and efficiency participation rates	Satisfaction indices. Cost per participant.
3. Impact	
Placement	Attendance. Course selections. Credentials/degree programs.
Retention	Quarterly/Semester. Annual.
Skill Improvement	Performance (grades, behavioral, skill acquisition). Achievement test scores. ACT/SAT/GED scores. ILP artifacts. Educator/supervisor ratings.
Earnings	Graduation/placement rates Completion of post-secondary training
Return on Investment	Net impact of services on income generation/cost savings in relation to cost of providing services. Expected median income earnings compared to cost of providing services.

Table 2: Accountability Type and Metrics for Evaluation

From *Establishing Accountability Metrics for Evaluating the Impact of Career Guidance Services on Academic, Career Development and Workforce Readiness Outcomes*, a research brief by Solberg, Wills, and Niles.

Note that this model, not yet implemented, includes many outcomes cited in the University of Derby review of literature and many more outcomes than suggested by Mayston. In addition, the model suggests assessing the quality of the career guidance interventions delivered, their cost-effectiveness, and client satisfaction with them.

The Hiebert Model (Canadian Research Working Group for Evidence-Based Practice in Career Development [CRWG])

This model is based on the concept of a process that flows from *Inputs* to *Process* and finally to *Outcomes*. *Inputs* refer to the resources that an agency can access to deliver career services. Those resources consist of staff (including their level and type of training), funding, mission, facilities, infrastructure, and community resources. The amount and scope of available resources has a large influence on an agency's ability to offer quality services.

Processes comprised two main components: 1) the interventions themselves that are related to outcomes; and 2) quality service factors that affect the general operation of the agency but do not directly relate to specific outcomes. Interventions are divided into two broad categories – generic and specific. Generic interventions are broad-based services that are common between service providers and clients. Specific interventions are more focused and designed to effect client change. They include services offered by staff at the local site, programs offered by the agency, and any services provide by a third party under the auspices of the agency/site.

The career interventions are organized into the categories of career decision making skills (awareness of personal interests, abilities, and values; knowledge of the labor market, etc.); work-specific skills enhancement, job-hunting skills (finding job openings, resumes, job interviews, interview follow-through, etc.); job maintenance skills (knowledge of factors contributing to job loss, conflict resolution skills, overall work habits); and career-related personal development (self-efficacy, skills for managing life demands, flexibility, adaptability, and awareness of job opportunities).

In order to evaluate the processes, evidence is gathered about counselor and client adherence to the intervention plan, client satisfaction with the service, agency adherence to mission, and numbers of students/clients serviced.

Outcomes refer to the specific results of an intervention, including changes in client competence (knowledge and skills), personal attributes, situation, and/or broader changes for the client and/or community. These are categorized into learning outcomes (knowledge and skills gained), personal attribute outcomes (changes in attitude, self-esteem, motivation, etc.), and impact outcomes (life changes, social impact, and economic impact).

Research Evidence Supporting Some Aspects of the Models

Several reports related to the effectiveness of differing modes of delivery of career interventions were completed by Spokane and Oliver between 1981 and 1988. Their work focused on analysis of a large number of studies (Spokane & Oliver, 1988) in which clients/students received four different modes of delivery of career guidance/counseling: one-on one counseling, structured group guidance, unstructured group counseling, and computer-based delivery. One-on-one counseling was found to be the most effective mode of intervention and also the most expensive. The only variable that affected outcome magnitude was intensity; that is, time on task. Computer-based (now web-based) career interventions were the least expensive.

Whiston et al. (2003), in a later analysis of the work of Spokane and Oliver, made the following conclusions:

1. Interventions that did not involve a counselor were found to be less effective than other modalities.
2. Workshops or structured groups tended to produce better outcomes than non-structured career counseling groups.
3. Participants who used a computer-based system supplemented by counseling had better outcomes than those who just used the computer-based system.

Effects of Career Guidance/Assessment on Choice of Educational Pathways and Areas of Specialty

It is likely that John Holland (1968) was the first to study the relationship between the measured interests of individuals and their selection and persistence in specific postsecondary areas of specialty (majors). Because ACT's interest assessment UNIACT was included in the ACT® college entrance examination, hundreds of thousands of high school students took the interest assessment each year and received results in the form of a three-letter Holland code. Further, Holland and his colleagues developed a method for assigning a code to each major available in American colleges and universities. Because ACT has the capability to follow students longitudinally throughout their time in university, Holland (as vice president of Research at ACT) was able to find out which major fields they entered and whether they remained in that major field. The findings (Holland & Whitney, 1968) indicated that students who chose a major with the same or highly similar code to that of their personal interest code had an 8 out of 10 probability of persisting in that major. Those who did change majors, in keeping with Holland's hexagonal theory, moved to a major whose code started with one of the two letters adjacent to the first letter of their own code.

Studies by Kuder's research faculty have extended these findings. In one study (D'Achiardi-Ressler, 2008) the hypothesis "Students who use the Kuder® Career Planning System™ (KCPS) demonstrate better career decision-making skills including fewer changes in their choice of college major as well as high congruence between their major choice and their assessment results" was examined. The study was completed with 1,989 students who attended two technical colleges in the state of South Carolina where the KCPS was extensively used. Findings showed that 60.9% of KCPS users did not change their major, compared to 22.0% of non- KCPS users. Further, there was a high congruence among KCPS users in selection of a major related to their highest interest assessment scores.

In a more recent study (Trusty, 2014), completed at a large university in the southern part of the United States, the research question asked whether choosing a major in alignment with measured interests affects grade point average. The sample for this study was a cohort of 12,697 students who entered a public research university prior to August, 2012. All of these students had an opportunity to complete the Kuder® Career Search with Person Match (KCS), an interest assessment, and of this cohort, 6,506 did so. These students had the opportunity to accumulate three semesters of coursework by the summer of 2013. The primary focus of this study was on the match between students' interest inventory clusters and their selected majors, and if this degree of match (called *congruence*) between interests and major is related to academic outcomes expressed as grade-point-average (GPA). Notable findings are that students whose majors were congruent with their interests had higher GPAs. Specifically, if students' selection of majors matched any one of their top three ranked KCS interest clusters, their GPAs were significantly higher than if there was no match between highest interest clusters and major selected.

The secondary focus of this study was to determine if there were differences in cumulative GPA for those students who took the KCS (despite levels of congruence) versus those who did not take it. For incoming freshmen, those who took the KCS had higher cumulative GPAs in their third semester (.136 higher) than

students who did not take the KCS. Findings indicate that taking the KCS is effective when it informs or affirms university major choices.

This same topic is addressed in ACT's 2008 publication *What We Know About College Success: Using ACT Data to Inform Educational Issues*. Two of the conclusions at the end of this report are that "The closer the fit between students' interests and their college major (as measured by the ACT Interest Inventory) the less likely those students are to change their major by the third year of college." Further, "The closer the fit between students' career interests (as measured by ACT's UNIACT), and their choice of career, the higher their earnings are likely to be: for every 10-percent increase in career-choice fit, earnings increase by as much as 1.3 percent."

It is interesting to note that both assessments used in these studies, the Kuder interests assessment and ACT's UNIACT, are theoretically based on Holland's theory.

Effects of Informed Choice of Major on Postsecondary Participation and Retention

In the same Kuder study referenced above (D'Achiardi-Ressler, 2008), a second hypothesis was tested. That hypothesis reads as follows: "Students who use the Kuder Career Planning System (KCPS) transition from high school to higher education at a higher rate as indicated by the percentage of high school graduation and transition into the technical college after use of the KCPS." Of the 972 students in the user group for which data were available, 370 (37.3%) had started to use the system while in high school. From this group, 336 (90.8%) successfully transitioned from high school to a technical college and continued, at the time of the study, to be enrolled there.

Allen and Robbins (2008) conducted a study in which they hypothesized that college major persistence would be predicted by first-year academic performance and an interest-major composite score that is derived from a student's entering major and two work task scores. Using a large data set representing 25 four-year institutions and nearly 50,000 students, they randomly split the sample into an estimation sample and a validation sample. Using the estimation sample, they found major-specific coefficients corresponding to the two work task scores that optimized the prediction of major persistence. Then, they applied the estimated coefficients to the validation sample to form an interest-major composite score representing the likelihood of persisting in the entering major. Using the validation sample, the researchers then tested a theoretical model for major persistence that incorporated academic preparation, the interest-major composite score, and first-year academic performance. The results suggest that interest-major fit and first-year academic performance work to independently predict whether a student will stay in his or her entering major. The results support Holland's theory of person-environment fit and suggest that academic performance and interest-major fit are key constructs for understanding major persistence behavior.

Effects of Postsecondary Participation and Retention on Income

Data are plentiful to support the relationship between level of education and income. In a McGraw-Hill Policy paper (McLendon, Jones, & Rosin, 2011) the authors report the results in several U.S. states of programs designed to encourage adults to engage in and complete additional education. Levels of increased education included completing high school or the GED equivalency certificate, engaging in vocational-technical education that provided some type of certification, completion of an associate degree, and/or completion of a baccalaureate degree. The report discusses the impact on the economy of increased earnings, purchasing power, contribution to the tax base, and productivity of individuals who did complete further education. The calculations include savings achieved through less need for government-provided health care welfare benefits.
As an example, the data from the state of Arkansas are reported here, though the full report provides data for several states. Besides the provision of a focused motivational program for adults, encouraging them

to study for and pass the General Educational Development high school equivalency exam, the Kuder Career Planning System was also used in workforce development offices in 2008-2009, the year of this report. Following are the benefits found due to Arkansas' $18 million expenditure on adult education and guidance during the '08-'09 budget cycle, much of it spent in helping 7,443 GED test takers pass their GEDs and earn their high school equivalency diplomas (Arkansas has a GED pass rate of 85 percent, compared with 73 percent for the U.S.):

- Projected per-year additional state income tax of $1,978,349 ($8,860 x 7,443 GEDs x 0.03 income tax rate).
- Projected additional state sales tax revenue per year of $3,165,359 ($8,860 x 0.80x 7,443 x 0.06 sales tax rate).
- Projected total annual state tax benefit from additional earnings of $5,143,708.
- Projected additional income and sales tax of $1,123,200 from adult education employees earning a total of $14,400,000 involved in delivery of this program.
- In addition, during the 2007-2008 cycle, 2,386 students from adult education entered postsecondary education. Based on the 2000 U.S. Census estimate that individuals with some college earn an average of $4,290 per year more than high school graduates, these students are projected to generate $10,235,940 in taxable revenue, resulting in $921,234 annually in additional state taxes.
- Arkansas prisoners who earn GEDs have a recidivism rate that is lowered by 6.1 percent. Eight hundred and fifty GEDs were earned in Arkansas prisons in 2005, leading to these annual benefits:
  - ✓ The lower recidivism rate means that approximately 52 of these former convicts do not return to prison, leading to an annual savings to the state of $1,138,800.
  - ✓ Recent legislation allowing 90 days meritorious good time in exchange for earning the GED produces further savings by reducing the State's prison housing costs of $4,400,000 a year due to early release of this graduating class of 850.
- Using these annual benefits and assuming a conservative 10-year working career for the GED recipient, the net present value of state adult education funding, after return of the $18,025,693 state funding, for the 2008-2009 GED class is an additional $26,642,618, generating a rate of return on investment of 43 percent.

There are public health benefits, too, as lifetime total health savings for a high school graduate compared to a non-graduate is estimated to be $40,500. In 2007-2008, 5,216 students aged 16-24 earned their GED in Arkansas. The total projected savings in public health care over their lifetimes is $211,248,000. The lifetime total welfare cost-savings for a high school graduate is estimated to be $3,000. Using the 5,216 students aged 16-24 who earned their GED in Arkansas in 2007-2008, this would produce a total state welfare cost-savings over their lifetimes of $15,648,000.

This relationship between level of education and projected income, as well as unemployment rate, is dramatically documented by this 2013 chart provided by the United States Department of Labor at http://www.bls.gov/emp/ep_chart_001.htm.

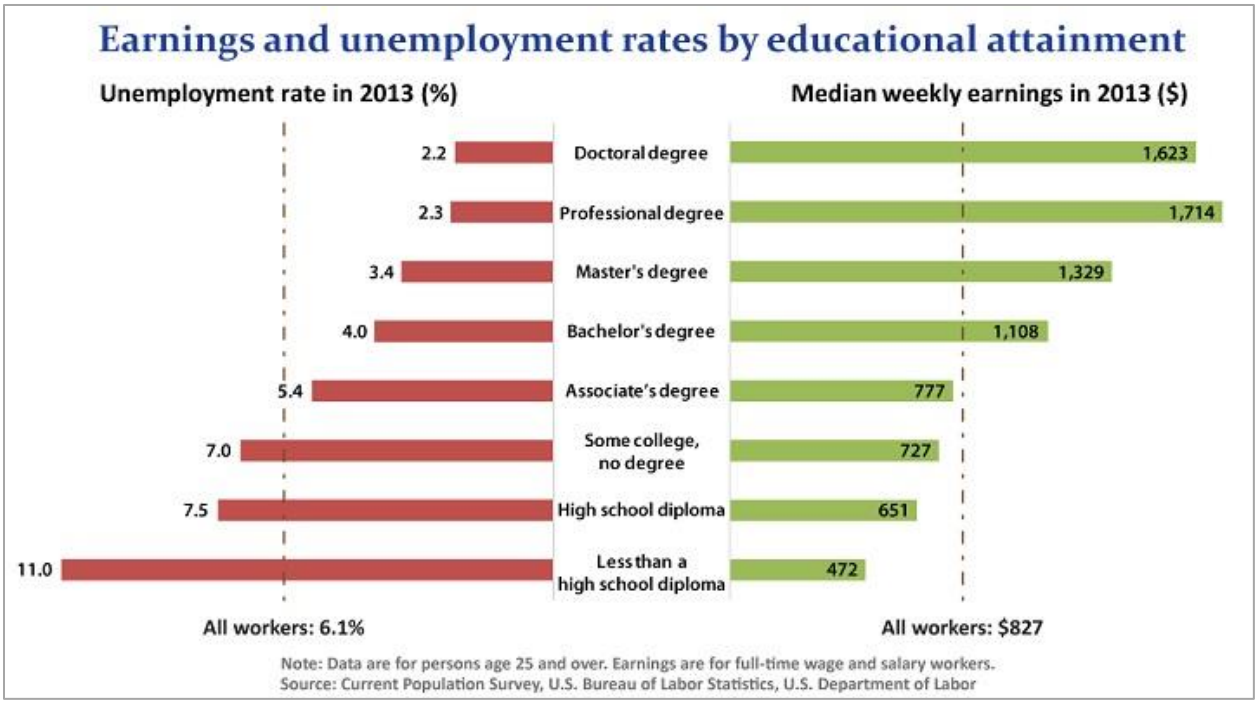

Figure 1: U.S. National Figures on Relationship between Level of Education and Income and Unemployment Rate

Challenges to Collecting Useful Evidence Data

The numbers provided by the U.S. Department of Labor and the state of Arkansas (and many other states and countries) about the relationship between level of education, which can be increased by effective career guidance interventions, and return on investment are impressive. Beyond the monetary gain, however, is the social access gain that can be achieved by career guidance interventions. Such interventions inform all citizens – regardless of socioeconomic class, religious preference, or gender – about their options related to education and career choices. In some countries career interventions may serve to change attitudes that currently limit the full participation of women in the workforce. If this barrier were removed in those countries, it is expected that a significant positive impact on these economies could be achieved.

Yet, a review of the literature of evidence-based career guidance services reveals many challenges. These challenges appear to be universal across countries, wherever valid evaluation has been attempted. These will be briefly described here for the purpose of creating awareness of the many variables that may need controls as formative and summative evaluation studies are planned.

Differing Definitions for Career Guidance

A review of the career guidance and vocational psychology literature reveals many differently-worded definitions of *career guidance*. These definitions typically relate to two ends of a continuum that ties it either to the totality of life or only to the arena of work. Donald Super's (1980) definition of *career* as the total of all activities that take place within eight interactive life roles (student, worker, parent, spouse, leisurite, citizen, etc.) is an example of the first. The more restrictive definition of *career* is the sequence of work positions held throughout an individual's lifetime. Obviously, the content and the expected outcomes that would flow from interventions based on these two definitions would be quite different.

Purposes of Career Guidance

Just as definitions of career guidance fall along a continuum, so do the purposes assigned to career guidance. At one end of the continuum is emphasis (and therefore, objectives and goals) on assisting individuals to gain an improved self-concept; understand their interests, abilities, and values more deeply; and be able to achieve a degree of self-actualization or life purpose through their work. Sometimes this purpose is stated as guidance in support of social justice, providing support and skill-building to underprivileged populations in order to give them an opportunity to have an improved life. At the other end of the continuum, the purpose of career guidance may be to support and bolster a nation's economy so that its people gain the technical and soft skills needed to fill the positions offered by employers. This condition grows the economy, and individuals contribute both to the gross national product and to the tax base. There is a continuing pipeline of prepared workers whose skills match the needs of the economy. Clearly, the interventions provided to support these two purposes would be different as would the measured outcomes.

Differing Modes of Delivery of Career Guidance Interventions

Career guidance content may be delivered in any nation or site in a variety of ways: through one-on-one counseling; group counseling sessions; workshops or career guidance groups; units of curriculum imbedded in academic courses; complete courses dedicated to career guidance content; and/or through web-based services, either supported or not supported by trained career advisors. As indicated in a previous section, though all modes of intervention provide benefits, research indicates that focused one-on-one counseling produces the most pronounced benefits while web-based services alone (without any human intervention) produce the fewest benefits (Oliver & Spokane, 1988). However, one-on-one counseling is the most expensive method of providing service, requires highly-trained individuals, and reaches the smallest number of individuals while web-based services are the least expensive and reach the largest number of individuals. So, because both effectiveness of service and cost of service are affected by mode of delivery, it is an important variable in developing career interventions and measuring their cost-effectiveness. The best balance appears to be that achieved by a comprehensive web-based career planning system supported by trained career advisors who can deal with students/clients as needed either one-on-one or in groups. Additionally, career advisors and teachers can help ensure treatment fidelity (e.g., helping students effectively use results of career assessments, engaging students in career decision-making and career planning).

Confusion About Which Outcomes to Measure

Lack of clarity about the definition and purpose(s) of career guidance in a given setting leads to confusion about which outcomes to measure. Here are some of the outcomes measured in a variety of studies included in a literature review:

- **Behavioral, motivational, and attitudinal change**: These studies examine characteristics such as levels of self-confidence, positive attitudes, motivation to seek employment, modified behavior, and motivation and interest in education and training before and after career guidance interventions. Other outcomes, such as a higher rate of job placement and achievement of a higher level of education, are often associated with increase in these attitudes and behaviors.
- **Improvement in skills and knowledge**: These studies measure the relationship between gaining specific skills and knowledge and outcome variables such as increased percent of job placement and increased earnings. These outcome variables are often measured in studies that document the return on investment of providing career and technical education programs to youth and adults.
- **Participation in postsecondary career-technical or academic education**: Some studies have focused on measuring the outcomes of career guidance interventions that encourage young people and adults to pursue more education whether that be completion of high school or vocational-technical or university-based higher education. These outcomes are measured in terms

of increased percent of individuals completing degrees or certifications, resultant job placement, and resultant annual earnings.

- **Student retention and achievement**: All levels of education – including online courses and degrees; associate, baccalaureate, and graduate levels; and career-technical programs – suffer a significantly high dropout rate. This dropout rate represents a significant financial loss to the institutions involved as well as the individuals. Some studies focus on measuring the outcomes of career guidance interventions that tackle this problem and on the benefits that accrue from increasing retention. Those benefits are typically measured in terms of the increased percent of job placement, lower unemployment rate, and increased earnings. These increases contribute to the spending power and increased tax contributions of individuals, the lessening of needed welfare benefits, and the strengthening of the capability of a nation to compete in the global society.
- **Job-seeking activity and placement**: Some studies focus on measuring the outcomes of career guidance interventions on job-seeking activity and job placement. The career interventions involved in these studies include instruction on preparing effective resumes or e-portfolios, job interviewing skills, where and how to find job openings, job-seeking support groups, and the like. Outcomes are measured in terms of shortened time from beginning of job-seeking to placement, better matched job placements, and improved earnings.

Variability of Data Desired by Different Stakeholders

Studies can be designed to measure a combination of these kinds of outcomes. Different stakeholders will be interested in different kinds of outcomes. Career counselors and advisors may be most interested in attitudinal and motivational changes. School and university administrators may be most interested in student retention. Faculty members may be most interested in increases in student achievement and skills as they relate to job placement and income. Policymakers and legislators may be most interested in increases in job placement, increases in earning power, increases in tax contributions, and decreases in costs for unemployment and welfare programs. Directors of career guidance interventions will be most interested in feedback about the content and quality of the program of services. Thus, outcome studies must define the outcomes to be measured by different stakeholders, use a variety of data collection tools and techniques designed to provide data in a variety of ways, and measure a variety of well-defined outcomes. Tools and techniques used are likely to include informal strategies – such as questionnaires, focus groups, interviews, and pre- and post-assessments – and more formal strategies, such as longitudinal studies, experimental and control-group studies, and sophisticated financial calculations.

Varying Nature of Career Interventions

A major challenge, especially in large-scale outcome studies, is the variability in the career interventions provided. This variability results from differing content (even if on the same topic or taken from a "standard" curriculum), different approaches to presenting content, differing levels of expertise of the person(s) providing the intervention, differing levels of environmental support, length and intensity of the intervention, and student/clients' access to the intervention at key choice points in their decision making. For example, it is probable that a unit of material on job-seeking skills presented in four small group sessions to adults who are motivated to find a job by an experienced employment counselor is more likely to produce desired outcomes (shortened job-seeking time, increased percent of job placement) than the same material presented to high school seniors over a semester by a variety of classroom teachers. This is likely to be true because: a) the intervention is focused in time and intensity; b) the audience is motivated and in immediate need of job placement; and c) the facilitator is more knowledgeable.

Some Concluding Remarks

This paper has reviewed the reasons for program evaluation, some methodologies for doing so, results of some significant studies, and significant challenges to designing and implementing studies that provide the data needed by different stakeholders. Drawing from those challenges and from the review of literature included in this paper, the following are some conclusions that may be helpful as local schools, states, and nations move forward with planning implementation and evaluation of a more comprehensive career guidance system for youth and adults.

Using a broad spectrum of stakeholders, define *career guidance* in your setting, the purposes envisioned for it, and the outcomes desired from it.

Stakeholders include students, parents, adults, employers, schools, vocational-technical institutes, colleges and universities, and government. Each of these groups will have different focus points. Students may want to get well-paying and satisfying jobs after completion, and parents are likely to share that focus. Government agencies may want to reduce unemployment, increase the tax base, reduce welfare benefits, and increase access for underprivileged populations. Employers want to be sure that there is a pipeline of skilled workers who have both the technical and "soft" skills needed to be productive in their various industries. Schools, colleges, and universities may want to increase enrollment and retention.

In developing a definition, purposes, and desired outcomes for career guidance it will be necessary to form a planning group comprised of these stakeholders and to gather broader input for use by that group through techniques such as surveys and focus groups. Accomplishing consensus may be a long and tedious process, but it is a critical one in order to formulate career guidance interventions and a long-term plan for evaluation. The work accomplished in such planning groups must be translated into a written statement of the definition of career guidance, its specific purposes for different age groups, and its desired outcomes for different age groups. Once this task has been completed, reviewed, and approved by appropriate agencies, the next task can begin.

Based on the adopted definition of *career guidance*, stated purposes, and the expected outcomes in measurable terms, design appropriate career guidance interventions and services.

This step should likely be accomplished by a different team from the one engaged in deciding on purposes and outcomes of career guidance because the skills and knowledge needed to design a program of services are different. The task involved in this step is made up of a series of sub-steps as follows:

- **Clearly define the target populations which are to receive services.** Ideally, services would be designed for persons of all ages, beginning in primary school and extending through adult workers.

- Based on the definition of *career guidance* and the purposes and desired outcomes agreed upon, **write measurable objectives for each target population at defined intervals or choice points**. For primary students, for example, these objectives may be written for each grade level. For secondary level, they may be written to relate to key points in choice of curriculum. For university students, they may be written related to choice of academic specialty and job placement. For adults, they may be written related to job placement and job transition.

- Based on the stated measurable objectives for each population, **plan the specific career interventions to be delivered at each level in order to achieve these objectives**. This ambitious step includes decisions about modes of delivery, personnel needed, training needed, amount of time allocated to the interventions, resources needed, and associated costs. In order to reduce the problem of having variability across sites to be included in evaluation, the career interventions should be as standard as possible across sites. Accomplishing this means that materials used,

delivery modes, qualifications of personnel, training of personnel, and amount of time allocated should be as standard as humanly possible. Based on what is known about the cost-effectiveness of services, the most effective delivery modes will be web-based services combined with services provided by trained career advisors through one-on-one contact or group guidance/workshop approaches. In will be crucial to have ways to quantify the fidelity of services, at both the institutional level (e.g., intensity of career guidance implemented) and the individual student level (e.g., amount of contact with career advisors, use of assessment results).

- **Determine the resources needed to deliver these interventions cost-effectively**. Resources include staff, facilities, licensing costs for software, equipment and supplies, high-quality training, and a budget for a high level of marketing and promotion to target populations. Staff includes managers and program developers, clerical support, and career advisors.

- Based on the data desired by various stakeholders, the purposes assigned to career guidance, and the measurable objectives stated for each population, **design a program for collecting data which provides evidence that the goals and objectives of the career guidance program are being met**. It is very important that this evaluation design be accomplished prior to implementing a new comprehensive program of services so that the evaluation is effectively imbedded in the program. There will be a number of different ways in which data are collected – through online or print-based surveys, focus groups, pre- and post-assessments, hard data (such as number of participants in a given activity, time spent using a web-based system, percent increase in retention, job placement, or involvement), satisfaction ratings by employers, follow-up studies of those who did/did not participate in specific interventions, experimental-control group studies, cross-sectional studies, etc. For the sake of ease of data collection and later analysis, a system needs to be designed that would store these data in one central database for all sites.

At agreed upon intervals, report the data to appropriate stakeholders, and use it to enhance services as needed, identify problems, evaluate effectiveness in reaching objectives, and calculate overall return on investment.

Worldwide experience in seeking to provide valid evidence that career guidance offers significant benefits both for individual lives and for national economies speaks to the importance of these recommendations.

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