

**Ethical Delivery of Computer-Assisted Career Guidance Services:  
Supported vs. Stand-Alone System Use**

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In R. C. Reardon (chair), Ethical Issues in Using Computers to Deliver Career Services:  
Counseling Intervention, Equality of Access, and the Internet. Paper presented at the  
National Career Development Association Conference, Daytona Beach, FL, January, 9-11, 1997

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Making decisions about the type and amount of staff assistance provided to clients is an important step in deciding how to integrate computer-assisted career guidance (CACG) systems into the services of an organization. The goal of counselor intervention is to provide clients with a type and level of support that cost-effectively meets their needs as they use a CACG system. In this way, staff avoid over-serving or under-serving clients, e.g., providing clients with more help than they really need or not providing the help clients actually need to make an appropriate career decision.

Over- and under-serving clients results in potential ethical problems for staff. Because only a fixed amount of counselor time is available, allocating valuable staff resources to those clients who are capable of benefiting from CACG system use with minimal or no assistance (after screening), means that other clients are denied access to the services they may need. At the other extreme, the failure to allocate staff time to those clients who need assistance to benefit from CACG system use means that these clients are also denied access to the services they may need. Access to information does not necessarily equate to access to needed services. Consider the following scenarios.

A student seeks help from a counseling center to resolve her state of indecision regarding her choice of occupation and field of study. The counseling center brochure states that clients are served via one hour individual appointments with center staff. She is informed that staff are very busy and that no appointments are available for six weeks. She is then told that she would be welcome to browse through the career library in the counseling center if she did not want to wait the six weeks for the next available appointment. Frustrated, she haphazardly glances over a large collection of books and information files, fails to find relevant information, and concludes that the counselor probably would not be helpful either and leaves the center.

A student seeks help from a career center to resolve his state of indecision regarding his choice of occupation and field of study. Given the general nature of his request for assistance, he is given an appointment by a staff member for a CACG system later in the week. He is then provided with a handout describing the CACG system. He arrives for his appointment confused as to how the system relates to his particular career problem. As he uses the system he becomes overwhelmed with the available assessment, search, and information features. He finds it difficult to decide how to best use the system and has negative expectations about his ability to "make the system work right," which is a function of his general indecisiveness. After an hour of fruitless use of the system, he leaves, concluding that it was his fault that he did not get the services that he needed. He reasons that staff would not have asked him to use a system that was not "right" for him.

In both of these situations, staff did not provide a level of support appropriate for the client. In the first scenario, a brief screening interview could have determined that the client had a high degree of readiness for CACG system use and needed only to view an orientation video, gain access to the system, receive help (if needed) while she used the system, and know who she could talk to if she experienced any problems or wanted to discuss other issues after using all or part of the system. In the second scenario, a brief screening interview could have determined that the client was not ready for independent use of a CACG system and that he needed more support before, during, and after system use in order to solve his career problem. Because staff time is allocated on the basis of need, many high readiness clients can be served with minimal staff involvement, and the relatively few clients with serious decision-making problems can receive the depth of assistance actually required to meet their needs.

This paper will explore the assumptions that influence the selection of supported or stand-alone CACG use, the need for counselor intervention, counselor intervention research, and CACG-related ethical standards, as well as models, staff roles, options, and factors related to intervention.

### **Assumptions Influencing the Selection of a Supported or Stand-Alone Approach**

The decision to use a CACG system in either a supported or a stand-alone mode is strongly influenced by staff assumptions about CACG and career guidance. The following two assumptions represent two ends of a continuum on this issue.

- 1) The first assumption is that CACG is essentially an electronic version of a book and like a book should be generally available in library-like settings (or a computer network) without requiring counselor intervention. While it may be true that some individuals, because of their characteristics or needs, may not be able to fully benefit from independent stand-alone use of CACG, the societal need to provide individuals with maximum access to career guidance resources outweighs the need to ensure effective use of CACG systems by individuals.
- 2) The second assumption is that CACG is essentially an assessment resource linking individual characteristics with occupational and educational opportunities for the purpose of encouraging exploration while providing a portion of the information needed for decision making. As a result, this type of resource should be available only within the context of other career guidance services. Individuals are perceived as varying in terms of their needs, their capacity to understand assessment and search methodologies, and their willingness to seek "magical" answers from CACG and to accept computer-generated data as inherently valid. The current need to provide human intervention to ensure effective use of CACG by individuals outweighs the societal need to provide individuals with maximum access to career guidance resources.

An optimal choice about using a CACG system in a supported or stand-alone mode should balance the need to provide individuals with reasonable access to effective services with the need to provide individuals with easy access to career services that are an essential component of education and employment.

### **The Need for Counselor Intervention**

A variety of factors contribute to the need for supported client use of CACG systems via counselor intervention. Potential factors contributing to the need for intervention include client readiness for CACG system use and problems with CACG system use.

#### **Readiness for CACG System Use**

Some clients appear to be more ready to benefit from CACG system use than others. Factors that affect readiness include verbal ability, interests, decision-making styles, knowledge, confidence, motivation, goals, self-reliance, career thoughts, mental health, career choice barriers, and CACG misconceptions.

Limited verbal ability. Haring-Hidore (1984) observed that the reading and persistence requirements associated with CACG systems may make system use particularly difficult for students with reading disabilities. Chapman and Katz (1982) found that the capacity to use occupational information in career decision making was positively correlated with verbal ability. Roselle and Hummel (1988) found that clients with lower levels of intellectual development made less effective use of a CACG system than did students with higher intellectual

functioning. As a result, stand-alone CACG system use may be inappropriate for individuals with limited verbal ability. Supported use allows complex CACG concepts to be clarified for the user, with follow-up of system use providing the opportunity to better ensure that the user has understood and acted upon available information to make an appropriate career choice.

Goal instability and dependence. Clients with less stable personal goals and who were less self-reliant benefited less from using a CACG system than clients with stable goals who were more self-reliant (Kivlighan, Johnston, Hogan, & Mauer, 1994). In comparison with stand-alone CACG use, supported use provides an opportunity to explore personal and family issues that contribute to having less stable goals and less self-reliance. Follow-up of CACG system use can then help to ensure that goal instability and dependence do not compromise the career decision making-process.

Social and enterprising interests. Students with social and enterprising interests evaluated a CACG system less positively than students with other interest patterns (Lenz, Reardon, & Sampson, 1993). While stand-alone CACG use may be less appealing to individuals with social and enterprising interests, CACG use within the context of workshops, group counseling, and curricular interventions is more likely to provide the social context that these individuals may need to process information about themselves and their options.

Limited knowledge, confidence, and motivation. Dungy (1984) found that students with less self-knowledge, occupation knowledge, confidence, willingness to assume responsibility, and willingness to use resources, were correspondingly less successful in using a CACG system. Existing self and occupational knowledge provide the foundation for CACG use, while confidence and the willingness to engage in decision making provide evidence of the motivation necessary to fully utilize the resources that a CACG system offers. Individuals with a limited knowledge foundation and poor motivation are not likely to make effective use of a CACG system in a stand-alone mode. Supported interventions are more likely to provide the structure and encouragement necessary for these individuals to risk assuming responsibility for decision making and for following through with use of career guidance resources.

Negative career thinking. Thinking negatively about self, occupations, and the decision making process makes it more difficult to solve career problems. Individuals who have negative career thoughts tend to be in a state of indecision, as well as having less vocational identity, choice certainty, and knowledge about occupations and training. Negative thoughts make it more difficult for individuals to think clearly about themselves, their options, and the process of decision making (Sampson et al., 1996). Negative thinking may make it difficult or impossible to effectively use the assessment, search, information dissemination, and action planning functions of a CACG system. For example, individuals may cognitively distort their perceptions of past and future experiences, focusing on past failures and anticipating future problems. In terms of the self-rating of skills, clients may give unrealistically low ratings of their skills thus influencing the range of occupations identified for subsequent exploration. Clients may also give unrealistically low self-ratings of their interests. Even though they may have a specific interest, e.g. helping others, they anticipate failure at this activity and give a low rating for this interest, again influencing the range of occupations identified for subsequent exploration. In terms of the use of occupational information, clients may view a description of typical job tasks of an occupation and imagine failing at those tasks and eliminate the occupation from future consideration, when in fact they do have many of the requisite skills to succeed in the occupation. All three of the preceding examples involve an inappropriate limitation of occupational exploration. In terms of planning follow-through, some CACG systems involve users in creating an action plan for implementing an occupational or educational choice. Clients who think negatively may have difficulty in setting realistic goals and identifying realistic steps necessary to achieve their goals. In comparison with stand-alone CACG use, supported use provides an opportunity to help CACG system users identify, challenge, and alter negative thoughts that limit career decision-making effectiveness.

Anxiety and depression. Anxiety and depression can limit the problem-solving capabilities of an individual using a CACG system. Herr (1989) noted that mental health consequences existed for job loss and dissatisfaction. Some clients seeking career services have significant mental health as well as career needs. Anxious or depressed individuals may have difficulty concentrating while using a CACG system. They may also have difficulty in deciding on a sequence for best using the components of a CACG system to meet their needs. Supported CACG system use provides an opportunity to monitor the extent to which anxiety and depression are compromising CACG

system use and to provide the structure and support the user may need, all of which would be unavailable if the system were used on a stand-alone basis.

Barriers to career choice. A variety of individual characteristics can hinder the career decision-making process. Brown and Brooks (1991) noted that some clients have too few interests, have unrealistic or self-limiting aspirations, or are resistant to career counseling. Fredrickson (1982) and Brown and Brooks (1991) noted that multipotential persons typically have more difficulty with career choice. Other barriers, such as conflict among life roles, conflict with parents or spouse, a lack of financial resources, prejudice, and stereotyping make career decision making more difficult. Stand-alone, unsupported access to a CACG system may provide assessment and information resources relevant to the above barriers. However, stand-alone system use does not provide a supportive context for identifying and resolving personal and family issues influencing career choice. Supportive interventions may be necessary to effectively deal with these barriers to career choice. Counselor intervention with CACG is particularly important for adults given the constraints and multiple roles that often exist (Closs & Miller, 1989).

Intuitive decision-making styles. Spokane (1991) noted that problems can occur in attempting to teach rational decision-making strategies to intuitive persons. CACG systems are inherently rational in nature. Counselor intervention can assist more intuitive clients to use CACG systems in a sequence and manner that is congruent with their decision-making style. Individuals with an intuitive decision-making style who gain unsupported access to a CACG system may not have the opportunity of learning how to use the system in a manner congruent with their decision-making style.

Misconceptions about CACG. Inappropriate expectations about using a computer-assisted career guidance system may limit critical thinking and exploratory behaviors necessary for effective career decision making. Spokane (1991) noted that clients value tests and CACG more than other career interventions. Some clients view computers as providing magical answers to their decision-making problems (Goodyear & Sinnett, 1984; Spokane, 1991). Rayman (1989) stated that, "Users frequently expect that the system will solve all of their problems or provide them with a detailed directive of how to choose their major, implement their career, and live their life" (p. 6). As a result, clients may be less likely to assume responsibility for their own decision making. Some clients also perceived that computer-disseminated information was inherently valid (Bleuer & Walz, 1983; Engels, Caulum, & Sampson, D., 1984; Lister, 1970; Thiers, 1988). This misconception may limit critical thinking and the motivation to seek corroborating or disconfirming information from other sources. Supportive use allows the opportunity to introduce a CACG system in a manner to reduce misconceptions about the system. Follow-up of system use may help to further ensure that misconceptions have not compromised career decision making.

Readiness for supportive vs. stand-alone system use. One might erroneously conclude that CACG systems are only appropriate for relatively high functioning individuals. It is likely that this conclusion is valid for stand-alone CACG use. With appropriate counseling intervention, clients functioning at a variety of levels can receive the support necessary to process and apply the information they receive from a CACG system to their career decisions. Clients with severe cognitive and/or emotional impairments would likely be inappropriate system users irrespective of the level of support available.

### **Problems with CACG System Use**

The search process used to identify occupations that are congruent with self-assessment and measured assessment variables is typically the most cognitively complex aspect of a CACG system. Several problems may result if individuals fail to understand how occupational options relate to their values, interests, skills, and preferences for various labor market variables (e.g., employment outlook, education required, physical demands). First, the capacity of the system to promote learning about career decision making is limited, and as a result individuals miss an opportunity to improve their skills for making future decisions. Second, for individuals who view the system as providing "magical" answers, they may uncritically pursue occupations and education based on inappropriate assessment data. Third, individuals may be less likely to vary their self-assessment data to learn how changes in their values, interests, and skills impact occupational opportunities. Effective counselor intervention can ensure that clients are ready for, and have a realistic understanding of, CACG assessment and search functions. Drier (1989, p. 17-18) observed that counselors need to provide orientations to CACG system use that include "cautions, purposes, goal expectations, rules, procedures, and limitations of any system in use." Professional support reduces the risk that an individual will misinterpret assessment results (Harris-Bowlsbey, 1985c). Watts, Kidd, and

Knasel (1991) noted that some individuals who use CACG systems in stand-alone settings will need guidance support to minimize problems associated with drawing inappropriate conclusions from system use. In an evaluation of CACG system use, Flynn (1990) found that students routinely skipped the on-line instructions on system operation. Introductory instructions are often critical in understanding CACG assessment and search processes.

Individuals may become overwhelmed with the large amounts of information contained in many CACG systems. Counselors have an important role in helping clients determine which information is relevant to their concerns (Gelatt, 1984). As the amount of information available continues to increase, this role for the counselor becomes increasingly important. After obtaining information, counseling intervention can assist the client in analyzing the risks and desirability associated with occupational alternatives (Maze & Perlmutter, 1983). Counseling can help clients deal with emotional reactions to information as well as help clients “think through the implications of information for attitudes and for action” (Super, 1970, p. 107). Illovsky (1991) noted that computer users may be unaware of additional services and materials when counselor intervention is lacking. “Considering the number of questions our staff answers from students interacting with a computer, it is questionable that any existing system is truly a stand-alone program” (Johnston, Buescher, & Heppner, 1988, p. 41). Ball (1990) noted that use of CACG is more effective when: 1) recommendations are made about system features that meet specific needs; 2) system progress is monitored; 3) feedback is provided on system use; and 4) the results of system use are discussed. Some institutions have made policy decisions requiring counselor intervention before and after CACG system use (Bryson-Israel & Schweriner, 1989; Salters & Hix, 1989).

### **Research Related to Counselor Intervention**

Counselor intervention research has included general studies of CACG system use that have incorporated the topic of counselor intervention and studies that have compared the effectiveness of supported and stand-alone CACG system use.

#### **The Nature and Availability of CACG Counselor Intervention**

In a study of CACG system use, Sampson, Shahnasarian, and Reardon (1987) found that counseling interventions were provided before system use (88%), between system use appointments (61%), and after system use (88%). Twelve percent of institutions responding indicated the use of a stand-alone approach. Paraprofessionals provided counselor intervention in 37% of the institutions. In a subsequent study of CACG system use, Howland and Palmer (1992) found that 81% of CACG systems operate with a counselor available during on-line use and/or follow-up is required. Small institutions were more likely to provide counselor intervention than large institutions (88% to 66%). Helwig and Snodgrass (1990) found institutional size and public vs. private status to have no impact on whether or not staff assistance was available for students using a CACG system. Telephone interview data from the Howland and Palmer (1992) study showed that few institutions offered CACG systems on a true stand-alone basis. Even when a minimal intervention was offered, some attention to career development issues or technical operation of the system was provided. Paraprofessionals in the roles of peer counselors or graduate assistants were often used to deliver interventions (43% to 38%). Follow-up telephone interviews of survey respondents indicated some ethical concerns about the use of CACG systems. “When asked what, if anything, they would change about the way how they operate with CACGS, the majority of those called said they would like to have more staff time for better quality service” (Howland & Palmer, 1992, p. 40). The follow-up interviews clearly identified a tension between the appeal of serving numerous students by making a CACG system easily accessible on the campus computer mainframe vs. concerns about follow-up opportunities and the quality of services provided in a stand-alone mode.

#### **Effectiveness of Supported vs. Stand-alone CACG System Use**

A number of studies have compared the effectiveness of CACG system use with counselor intervention vs. stand-alone CACG system use. Kapes, Borman, and Frazier (1989), Marin and Splete (1991), Niles and Garis (1990), and Savickas (1990) found counselor intervention to be more effective than stand-alone CACG system use. While students who received a structured counseling intervention and students in a stand-alone group perceived a CACG system to be equally effective, students receiving counseling spent more time using the system than students in the stand-alone group (Sampson & Stripling, 1979). Campbell (1983) and Garis and Harris-Bowlsbey (1984) found no statistically significant difference between counselor intervention and stand-alone CACG system use.

Shahnasarian and Peterson (1988) found stand-alone CACG use to be an effective intervention. Watts, Kidd, and Knasel (1991) found that one CACG system was more extensively used in a stand-alone mode in a university library than in a university career service. The library setting also appeared to attract a wider range of users than did the career service setting. However, stand-alone use also resulted in shorter use times, fewer second or subsequent sessions, and less positive evaluations from individuals in comparison with supported use in a career service. “Overall, the current evidence suggests that placing PROSPECT in places like university libraries is likely to produce a substantial increase in quantity of usage, but may make it more difficult to encourage quality of usage” (Watts, Kidd, & Knasel, 1991, p. 76). Easier and/or anonymous access to career services might improve utilization for some individuals who are unwilling to use existing services. Hunt (1993) also noted that self-help software may help integrate formal guidance with informal guidance in the community and the home. Although research results are mixed, supported CACG use often appears to be more effective than stand-alone system use. One of the reasons for these mixed results may well have to do with the nature of clients using the systems in these studies.

High readiness clients are likely more capable of benefiting from stand-alone CACG system use, while low readiness clients are likely less able to benefit from stand-alone use. It is likely that some individuals realize their need for help in using a system and actively seek assistance. It is also likely that some other individuals are unaware that they need assistance, and as a result, do not seek the help that they need. Furthermore, other individuals may be aware that they need help, but not be able to ask for assistance. Hawthorn (1993, p. 50) observed that “All clients, and particularly adults, are good at pretending to know what they want in order to save face (or protect the feelings of their helper), and it takes a skilled practitioner to know when they need help and when they do not.” Such individuals are likely to be poorly served when CACG systems are provided in a stand-alone mode via computer networks or public access locations. At a minimum, some type of screening intervention is needed to identify which individuals are likely to need staff intervention to benefit from system use. While some CACG systems include features designed to help the user identify their needs, no current system is sophisticated enough to effectively screen users in terms of the need for staff intervention.

The need for counselor intervention is ultimately a function of two factors, the characteristics of the CACG system and the characteristics of the user. In the past, aspects of some CACG systems were complex or confusing, thus requiring more staff intervention to ensure effective client use of the system. As CACG systems improve, less counselor intervention will be needed (Sampson, Peterson, & Reardon, 1989). For example, improvements in the capacity of CACG systems to monitor the user’s dialog during system use and provide appropriate feedback (Gati, 1994; 1996) may lead to a reduced need for counselor intervention. Ballantine (1986) concluded that stand-alone CACG systems become feasible to the extent that “(1) It is clear to the client that the system is a ‘decision-support’ i.e., that it is supporting the user’s decision making and not replacing it. (2) The client is capable of understanding the theoretical model which is embedded in the system. (3) The system is capable of explaining the basis on which it has reasoned to arrive at its outcome. (4) The embedded model is adequate in ways which transcend a narrowly cognitive approach” (p. 7). However, even with substantial improvements in the design of CACG systems, counselor intervention will still be needed because some individuals have characteristics that require assistance if their needs are to be met.

### **Ethical Standards Related to Counselor Intervention**

Ethical standards in counseling have supported counselor intervention as a necessary element of client use of computer software. The ethical standards of the American Counseling Association (ACA; 1995), the National Board for Certified Counselors (NBCC; 1989), and the National Career Development Association (NCDA; 1991), all identify the need to ensure that: (a) clients are ready for system use, (b) the system is appropriate for client needs, (c) clients understand the purpose, operation, and limitations of the software, and (d) follow-up is provided to identify potential problems and assess subsequent client needs. ACSCI standards state that “Any student or client should be oriented to the system prior to usage and should be given follow-up assistance after use” (Caulum & Lambert, 1985, p. 7). NCDA and NBCC ethical standards specifically mention the use of stand-alone software. Stand-alone software must be designed and validated for such use, as opposed to modifying software originally intended to be use in a supported mode. The software must also include information about the nature of successful use and circumstances where counseling would be appropriate. Howland and Palmer (1995) reported that 34% of respondents surveyed perceived that they were in compliance with the ACA, NBCC, and NCDA ethical standards described above. There appears to be a discrepancy between the standard of quality expected in these ethical codes

and the reality of staff perceptions of actual practice. Additional research is needed to identify staff performance in relation to specific standards and to identify the forces that influence compliance with standards. Research is also needed to ensure that the content coverage of the standards are adequate, e.g., coverage of problems that are likely to contribute to client welfare, while avoiding being unnecessarily restrictive. Watts (1996) has noted that attempts to be overly restrictive in limiting access to CACG systems are likely to fail. (See Sampson, 1996 for a bibliography of ethical standards and issues associated with the design and use of computer-assisted career guidance systems.)

### **Models for Counselor Intervention**

A variety of models have been proposed for integrating counseling and CACG system use into guidance services. This section begins with a description of general models of integration, followed by a proposed model of counseling intervention and a discussion of staff roles in intervention.

#### **General Models of CACG Integration**

Watts (1996) identifies the following four models for integrating CACG systems into guidance services:

- The stand-alone model, in which the computer system is used in isolation from other guidance interventions.
- The supported model, in which the user is seen - usually for a brief period - immediately before and/or after using the system.
- The incorporated model, in which the computer system is used within another guidance intervention.
- The progressive model, in which the use of the computer system is preceded and/or followed by other guidance interventions in a developmental sequence (p. 276).

The stand-alone model provides access to information at the lowest possible cost. The supported, incorporated, and progressive models all provide user support to maximize the likelihood that career decision-making needs will be met. The incorporated and progressive models have the further advantages of maximizing cost-effectiveness through the use of group interventions, and maximizing opportunities for synergy among resources and services via the systematic integration of a CACG system into a guidance program. Selecting one or more of these models is a reflection of the career guidance policy of the organization offering services. (See Watts, 1994 for a discussion of the varied policy issues influencing the design of career guidance services.)

#### **A Proposed Model of Counseling Intervention**

The following counseling intervention model is designed to provide structure for the supported, incorporated, and progressive CACG integration models described above. This model is an extension of previous CACG intervention strategies (Sampson, 1983; Sampson & Johnson, 1993; Sampson, Peterson, & Reardon, 1989). In brief, the model is designed to help ensure that: (a) CACG system use is appropriate for the client (screening); (b) clients have a realistic understanding of benefits, limitations, and functioning of the system in relation to their needs (orientation); and (c) clients have appropriately used CACG features to meet their previously identified needs and they have a plan for future action (follow-up). Wherever appropriate, group-based interventions (e.g., group counseling, workshops, and curricular interventions) should be used to maximize the cost-effectiveness of staff interventions (McCormac, 1988; Peterson et al., 1991; 1996). Self-directed career decision making<sup>1</sup> can also be used to cost-effectively deliver career guidance interventions (Reardon, 1996), including CACG support.

Screening. The purpose of the screening (or initial interview) is to ensure that the needs of the client are congruent with the capabilities of the CACG system. After completing the screening process, the client should have

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<sup>1</sup> "Self-directed career decision-making involves professional and paraprofessional guided use of self-instructional materials by individuals who need self-assessment resources and information and who possess adequate vocational identity to make effective independent use of career resources. As used here, this term does not include individuals' independent acquisition and use of self-help materials" (Peterson, Sampson, & Reardon, 1991).

established a relationship with the counselor that is appropriate for the service delivery setting, clarified his or her career decision-making needs, understand how their needs can be potentially met, and have an initial plan for using the CACG system and other resources and services. During screening, counselors obtain information from the client, formulate hypotheses about client needs, make recommendations about the use of service delivery options and information resources (including the CACG system) that are likely to assist the client in meeting his or her needs, as well as answer client questions. While a screening interview may be brief for most individuals, longer interviews may be required for individuals with serious career problems. A variety of brief hand-scorable screening instruments are available to facilitate the screening process (Sampson & Reardon, 1997). The need to determine client readiness for CACG services has been a consistent theme in the literature (Alston & Burkhead, 1989; Dugny, 1984; Harris-Bowlsbey, 1985b; Peterson, et al., 1991; Sampson & Pyle, 1983; Walz & Benjamin, 1984). Spokane (1991) emphasized the importance of client needs assessment prior to delivering any career intervention.

There are circumstances where very little screening effort is required. For example, assume an individual's presenting statement was, "I would like to find information comparing the starting salaries of accountants and auditors." A staff member might conclude that this request was concrete and did not reflect any problems with decision making. The staff member could then recommend the career information component of a CACG system and not engage in any further screening. If, however, the individual's presenting statement was, "I have changed programs of study several times and I am uncertain about the future," then the staff member would conclude that a more careful screening intervention was needed prior to the use of assessment and information resources. The key criterion for determining if a screening intervention is needed is initial staff judgment of an individual's readiness for career decision making. Failure to appropriately identify an individual with substantial needs can be corrected if staff in the career library occasionally interact with individuals to inquire if the individual's needs are being met. If it appears to a staff member that an individual is not making effective use of a CACG system, then a careful screening can be conducted to more accurately assess individual needs. Briefly checking with individuals to inquire if their needs are being met provides a "safety net" to ensure effective service delivery.

Orientation. The purpose of orientation is to enable clients to make full use of the capabilities of the CACG system, by helping them understand the benefits, limitations, and functioning of the system in relation to their needs. After completing the orientation process, the client should be better prepared conceptually to use the CACG system and more confident that he or she is capable of successful system use. During orientation, counselors disseminate information about the CACG system, relate the functioning of the system to specific client needs, as well as answer client questions. Individuals with a high degree of readiness can view an orientation video, reserving staff time for answering specific questions. Individuals identified with serious career problems are likely to need professional assistance in an individual or group format. Flynn (1990) found orientation to be important factor in CACG user satisfaction.

Follow-up. The purpose of follow-up is to ensure that the client's use of the CACG system met the client's needs that were identified during screening. After completing the follow-up process, the client should have fully used the features of the CACG system to meet his or her career decision-making needs. During follow-up, counselors continue the relationship development process as appropriate, monitor client use of the CACG system (paying particular attention to potential inappropriate use of the system and potential dysfunctional thinking about career choice by clients identified with serious career problems), reexamine client needs and make appropriate recommendations for further use of the system, as well as answer client questions.

If possible, a final follow-up interview is conducted to enhance the client's capability to effectively follow through on decision-making tasks. After completing the final follow-up interview, the client should have an understanding of the amount of progress that has been attained in meeting his or her needs, an understanding of the additional resources and services that can be used to complete the career decision-making process, and a general understanding of the career decision-making process that can be used for subsequent career decisions. During the final follow-up interview, counselors assist clients in evaluating their progress toward meeting their needs, recommend additional resources and services as needed, discuss how their current decision-making process can be generalized to future career decisions, as well as answer client questions.

### **Staff Roles for Counselor Intervention**

The question arises, Who should provide counselor intervention for CACG systems? Professionals,<sup>2</sup> paraprofessionals,<sup>3</sup> and clerical support staff may all provide elements of a CACG counseling intervention, depending on their training and experience. Ethical codes in the helping professions generally contain a standard to the effect that helpers are not to provide services beyond their training and experience. For example, a counseling professional may screen individuals for system use and provide counseling for clients with serious decision-making problems. A paraprofessional may conduct group orientations to the system and help clients use supplemental information resources. A clerical support staff member may respond to questions about how to make the system perform a specific function. Such differential staffing is more likely to allocate expertise in a more cost-effective manner. Good staff training and supervision are key elements in meeting the ethical requirements of keeping interventions within the boundaries of staff competence.

### Potential Options for Intervention

A range of options exist for balancing the quantity of access with the quality of access to CACG systems. This section begins with an exploration of the range of option available for full CACG system use, followed by a discussion of partial CACG system use in a stand-alone mode and an exploration of future opportunities for supported CACG system use.

- 1) Limit CACG system access to settings where appropriately trained staff (e.g., counselors, teachers, librarians, and/or paraprofessionals) are available to provide required screening, required introduction to system use, and required follow-up to system use. This option provides the highest degree of potential protection for low readiness individuals and potential improved system use for all individuals. However, this option also limits the number of individuals served or substantially increases the cost of service delivery. The use of more cost-effective group interventions can reduce these limitations.
- 2) Limit CACG system access to settings where appropriately trained staff are available to provide required screening, optional system orientation via videotape, and optional follow-up to system use by trained staff. This option provides a moderate degree of potential protection for low readiness individuals and a moderate degree of potentially improved system use for all individuals. However, this option also limits the number of individuals potentially served.
- 3) Open CACG system access via a computer network and/or stand-alone computers in public access locations (such as a library), in addition to offering a system in a career service delivery organization. In this option, access is moderated via a required screening delivered by trained staff. Appropriate users could then be provided with a personal access code for subsequent system use, with optional system introduction and follow-up provided via videotape and staff intervention respectively. This option provides a moderate degree of potential protection for low readiness individuals and potentially minimally improved system use for all individuals. However, this option also limits the number of individuals potentially served.
- 4) Open CACG system access via a computer network and/or stand-alone computers in public access locations (such as a library), with required telephone screening to determine how much support an individual is likely to require, after which a plan is agreed upon for system use that may or may not include additional phone contact. Appropriate users could then be provided with a personal access code for subsequent system use, with optional telephone support provided at the request of the user. This option provides a moderate degree of potential protection for low readiness individuals and potentially minimally improved system use for all individuals. This option only minimally limits the number of individuals potentially served.

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<sup>2</sup> Professionals include counselors, psychologists, librarians, teachers/faculty, and human resource specialists who are qualified to provide services within the limits of their training and experience (Peterson et al., 1991).

<sup>3</sup> Paraprofessionals include parent and community volunteers, counselors, psychologists, librarians, and teachers-in-training, as well as student peer counselors who are qualified to provide services within the limits of their training and experience (Peterson et al., 1991).

- 5) Open CACG system access via a computer network and/or stand-alone computers in public access locations (such as a library), in addition to a career service delivery organization, with optional screening, system introduction, and follow-up provided by trained career service staff. The availability of counseling support could be advertised on an introductory screen of the CACG system. This option provides little, if any, protection for low readiness individuals and minimally improved system use for all individuals. This option places no potential limits on the number of individuals served.
- 6) Open CACG system access via a computer network and/or stand-alone computers in public access locations (such as a library), using optional telephone counseling to deliver brief screening, orientation, and follow-up on an as needed basis at the initiation of the user. The availability of telephone-based counseling support could be advertised on an introductory screen on the CACG system. This option provides little, if any, protection for low readiness individuals and minimally improved system use for all individuals. This option places no limits on the number of individuals potentially served.
- 7) Open CACG system access via a computer network and/or stand-alone computers in public access locations (such as a library), in addition to a career service delivery organization. This option provides little, if any, protection for low readiness individuals. This option places no limits on the number of individuals potentially served.

#### **Partial Use of CACG System Components in a Stand-Alone Mode**

The above options assume that a complete CACG system is offered to individuals. Another alternative is to match intervention modes to specific portions of the system being offered. Some systems have the feature of allowing staff to select components that are offered to users. For example, a user at a counseling center may have all system components available with counseling intervention appropriate for his or her needs, while a user accessing software over a computer network at a public library or at home may use a limited set of system components without counselor intervention. As stated previously, the search process used to identify occupations that are congruent with self-assessment and measured assessment variables is typically the most cognitively complex aspect of a CACG system. The assessment and search portions of the software can be made unavailable in some CACG systems, leaving all of the CACG information files open to unrestricted access. These occupational, educational, and employment information files are in fact very similar to the information contained in books and CD-ROMs that are already available without access restrictions in libraries.

#### **Future Opportunities for Supported CACG System Use**

The evolution of the Internet into the information highway will allow potential opportunities for counselor intervention as follows:

Counselors can use client completion of learning resources on computers with information highway access as an opportunity to effectively intervene during the learning event. Counselor intervention “in the moment” provides access to a client’s perceptions and behavior as they occur, as opposed to subsequently discussing a client’s reconstruction of a learning event that may have occurred days or weeks earlier. For example, if a client becomes confused about the search process used to identify potentially appropriate occupations while using a computer-assisted career guidance system, one help option within the system could involve a brief two-way videoconference with a remotely-located counselor. The counselor could answer the client’s question or, with permission, access the client’s computer to determine which search variables were being used by the client and then use this data to explain the logic behind the search process. If during the discussion the counselor judged that the client was experiencing substantial difficulty, several levels of help would be possible. The counselor could simply observe and comment on the client’s use of the system while reinforcing exploratory and problem-solving behavior. If the client were particularly confused, the counselor could access the client’s computer (with permission) to demonstrate how to complete a specific task and then briefly observe and reinforce the client’s subsequent use of the system. In some cases, the counselor may judge that the client’s level of distress merits a referral to a local counselor. In extreme cases, the counselor may judge that a situation exists requiring immediate crisis intervention in addition to a local counselor referral. Appropriate Intervention during the use of self-help learning resources may encourage an individual to seek needed counseling services that the individual was previously unaware of or may have been avoiding (Sampson, Kolodinsky, & Greeno, in press, p. 12).

### **Factors Influencing the Selection of a Supported or Stand-Alone Approach**

The following factors are also likely to influence decisions about the need for CACG counselor intervention:

- 1) The impact of typical staff workload on the time available for screening, orientation, and follow-up activities.
- 2) Staff judgments about the typical readiness of individuals for effective career choice, informed by any available client data.
- 3) Staff experience using varying types of supportive interventions with CACG system use, informed by any available evaluation data.
- 4) The design of the CACG system with respect to the amount of support required.
- 5) The clarity and consistency of the CACG system design, with less clear and consistent systems needing more support.
- 6) The effectiveness of the CACG system used with varying levels of support as shown in any available evaluation data.
- 7) Congruence of CACG system components (self-assessment variables, information topics, decision-making process, and terminology for careers and career choice) with existing assessment, information, and instructional resources available to clients. Congruence between CACG systems and local resources reduces the need for interventions to explain differences in terminology, concepts, etc.
- 8) Extent of CACG system integration into existing career services, e.g. how well are recommendations for effective system use integrated into publications, signage, and staff public presentations.

### **Conclusion**

Irrespective of the amount of support, if any, provided to help individuals use a CACG system, regular evaluations of service effectiveness are needed. These data can be used to enhance current interventions or to provide a rationale to select a different model of intervention. In addition, ethical codes and the practice they reflect evolve in relation to changes in the profession, technology, and society. Professionals need to keep informed of this evolutionary process in order to make appropriate decisions about models of intervention. Finally, advocacy for quality service delivery needs to be balanced with the responsible use of limited funding resources for services. Avoiding over-serving or under-serving clients helps to ensure that the greatest number of clients have their needs appropriately addressed. Access is valuable only when something worthwhile is accessed!

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