

Helping Clients Get the Most From Computer-Assisted Career Guidance Systems

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Introduction

The counseling model described in this paper is intended to maximize the effectiveness of computer-assisted career guidance (CACG) systems in promoting career choice among individuals with varying needs. The three-step model uses:

- (1) **screening** to help ensure that CACG system use is appropriate for the needs of the individual;
- (2) **orientation** to help ensure that individuals make effective use of system capabilities by promoting a realistic understanding of the potential benefits, limitations, and functioning of the system in relation to their needs; and
- (3) **follow-up** to help ensure that individuals have appropriately used CACG features to meet their previously identified needs and they have a plan for future action.

The intended outcome of using the above model is to avoid over-serving or under-serving individuals, e.g., providing individuals with more help than they really need to effectively use a CACG system or not providing the help individuals actually need to make an appropriate career decision. In this paper, the terms “client,” “individual,” and “user” are used interchangeably to indicate a person receiving career services in a variety of settings.

This counseling intervention model is based on the following assumptions:

- (1) professionals and paraprofessionals (hereafter referred to as practitioners) are providing services within the limits of their training and experience;
- (2) practitioners are familiar with the design and use of the CACG system;
- (3) practitioners are familiar with the typical needs of the populations they serve and are sensitive to issues of age, culture, ethnicity, gender, race, and sexual orientation; and
- (4) practitioners are using appropriate communication and relationship development skills in addition to the counseling interventions described in this paper.

The counseling model presented in this paper is an extension of previous CACG counseling interventions (Sampson, 1983; Sampson & Johnson, 1993; Sampson, Peterson, & Reardon, 1989). The paper entitled, “Ethical Delivery of Computer-Assisted Career Guidance Services: Supported vs. Stand-Alone System Use” (Sampson, 1997) provides a discussion of the assumptions that influence the selection of supported or stand-alone CACG use, the need

for counseling intervention, counseling intervention research, and CACG-related ethical standards, as well as models, staff roles, options, and factors related to intervention.

This paper begins with a discussion of the effective use of this three-step model, the nature of CACG systems, and the timing of CACG counseling interventions. The paper concludes with an overview of the model, a presentation of potential interventions for screening, orientation, and follow-up.

Effective Use of this Three-Step CACG Counseling Intervention Model

A variety of counseling interventions can be used to maximize the effectiveness of CACG system use. As a result, the specific counseling interventions described in this three-step model should be viewed as potential interventions rather than required interventions. This model is best used as a stimulus for determining the counseling interventions that different practitioners might use in an organization that delivers career services. This model can also be used to help develop print and video-based resources to more cost-effectively deliver the information included in this three-step counseling process.

The amount of practitioner experience in helping individuals use a CACG system will also influence how this model is used. In organizations where a new CACG system is being implemented, practitioners should review potential intervention strategies associated with each of the three steps in the model, and make decisions about how counseling intervention will occur. When new staff members join organizations where a CACG system is already in use, the new staff members should review potential intervention strategies associated with this model and make decisions about how they will help individuals use the system. For practitioners experienced in using a CACG system, potential intervention strategies can be reviewed periodically as part of an individual or an organizational evaluation.

The Nature of Computer-Assisted Career Guidance Systems

Computer-assisted career guidance has been defined as

a system of interrelated assessment, generation of options, and information dissemination subsystems, often coupled with counseling interventions and various print and media-based support resources, that are used within an organization to assist individuals in making current career decisions, as well as improving their capacity to make effective career decisions in the future (Sampson, 1996).

CACG systems are comprised of components and features. CACG components reflect major elements of the career decision-making process, e.g., obtaining occupational information. CACG features include specific content and process elements of career decision making, e.g., typical work tasks for an occupation (content) or the ability to view two occupational descriptions at once (process). For a description of the features typically found in CACG systems, see Sampson et al., (1996). Typical CACG system components and related potential user outcomes are presented in Table 1 (Adapted from Ballantine and Sampson, 1995). While all CACG systems include assessment, search for options, and information delivery components (according the definition above), some CACG systems do not include needs assessment and recommended use, instruction, and action planning components.

The counseling intervention model described in this paper reflects common components and features of CACG systems. Most CACG systems contain some unique features that are not included in this counseling intervention model. After becoming familiar with interventions for the common components and features included in this model, practitioners should refer to the professional manual for the specific CACG system they are using for information on any feature-specific counseling interventions that are described.

The Timing of Counseling Interventions

As stated previously, this counseling intervention model includes the steps of screening, orientation, and follow-up. Given the ethical issues associated with the need for CACG counseling intervention described in Sampson (1997), screening (either brief or more comprehensive) should be the one required element of all CACG counseling interventions until such time that screening features within CACG systems are shown to be effective.

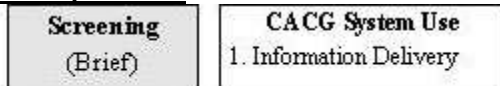
Determining the type and amount of assistance that an individual needs in order to make appropriate career decisions is one of the most important counseling functions. Screening, even very brief screening, is essential to avoid over-serving or under-serving individuals. However, the amount of time allocated to screening, and the process and resources used for screening, will vary among individuals, practitioners, and service delivery organizations.

Individual readiness for career decision making influences the timing of CACG counseling interventions. Readiness refers to the cognitive and affective capability of the individual to engage in effective career problem solving and decision making (Peterson, Sampson, Reardon, & Lenz, 1997). If an individual shows high readiness for decision making during screening, services can continue in a **self-help** mode, with orientation and follow-up provided if requested by the individual. If the screening process indicates that the individual has moderate readiness for decision making, then a **brief staff-assisted** intervention is likely needed, with an orientation provided prior to system use and follow-up provided after system use has been completed. If the screening process indicates that the individual has low readiness for decision making, then an **individual case-managed** intervention is likely needed, and a recurring cycle of orientation to and follow-up after system component use is provided until the individual's needs are met or an appropriate referral is made for other services (Sampson & Reardon, 1997).

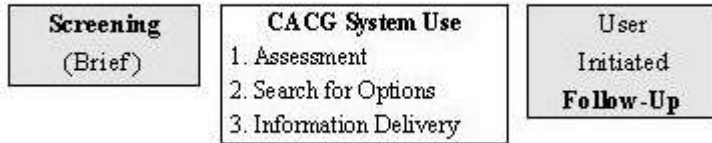
Screening and orientation occur prior to an individual's use of CACG system components, while follow-up occurs after an individual's use of system components. Screening and orientation can occur in a single counseling session. Since an individual may use a CACG system on a number of different occasions, follow-up of prior system use and orientation to subsequent system use can also occur in a single counseling session.

Examples of the timing for counseling interventions for self-help, brief staff-assisted, and individual case-managed interventions are provided below. Given the flexibility and diverse content of CACG systems, it is unlikely that any two individuals will use a system in an identical manner. Individuals are typically encouraged by practitioners, as well as the software, to use specific system components and features to meet their unique needs. The following examples of counseling intervention timing also highlight common variations in CACG system use by individuals. The numbers associated with CACG system use refer to the order of an individual's use of system components. Shaded boxes represent separate interactions between an individual and a practitioner (counseling intervention), while boxes without shading represent one session of CACG system use by an individual.

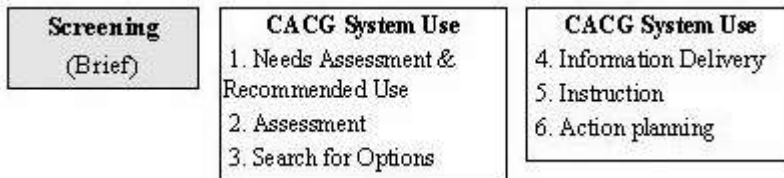
Self-Help Services



In this example, the individual obtained information from the system to answer a specific question after a brief screening.

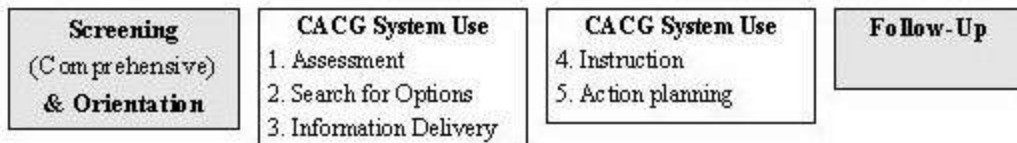


In this example, the individual used the system after a brief screening to generate and learn about options, and then sought follow-up assistance to answer a specific question.

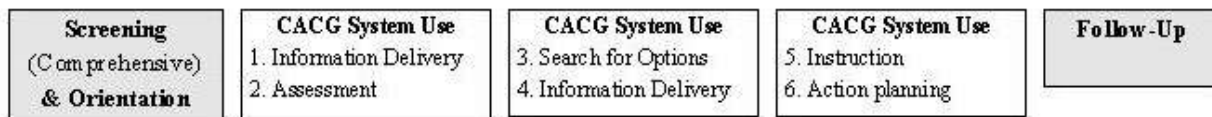


Here, the individual made extensive use of the system after a brief screening by following the recommendations provided by the needs assessment component of the system.

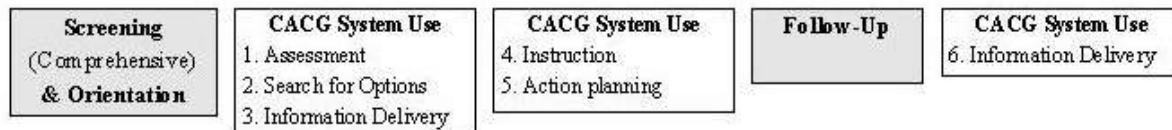
Brief Staff-Assisted Services



In this example, the individual made extensive use of the system after screening and orientation, with follow-up provided after system completion.



In this example, after comprehensive screening and orientation, the practitioner suggested that the individual begin her use of the system by obtaining information about her occupational aspirations in order to stimulate her thinking about work to better prepare her for use of the assessment component of the system. Follow-up was provided after system use.

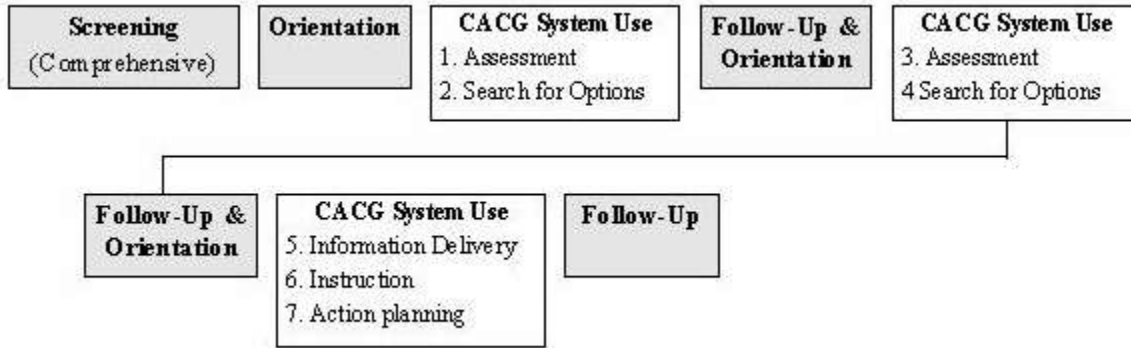


Here, extensive system use occurred between screening/orientation and follow-up. During follow-up, the practitioner suggested further use of the system to clarify questions raised by the individual.

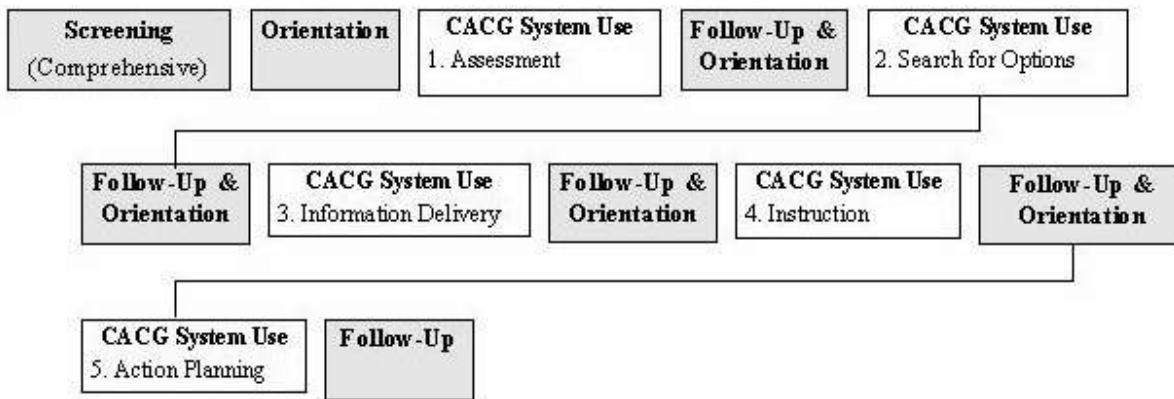
Individual Case-Managed Services



In this example, the individual’s use of the CACG system is divided into manageable units with follow-up and orientation to subsequent system components completed as appropriate.



Here, the practitioner discovered by review of the individual’s printouts that the user’s negative thinking had limited his use of the assessment and search for options components of the CACG system. After the practitioner helped the individual to identify, challenge, and alter his negative thinking, use of the assessment and search for options CACG components was repeated. As additional counseling interventions and system use progressed, the practitioner continued to monitor the impact of the individual’s thinking on the career decision-making process.



Here, the very low readiness of the individual for career decision making required that system use be completed in small units with substantial ongoing orientation and follow-up.

Additional descriptions of variations in the timing and nature of CACG counseling interventions are presented later in this paper.

A Counseling Model for Computer-Assisted Career Guidance Systems

This section presents an overview of the CACG counseling model. For each step in the model, the purpose is identified, key counseling functions are identified, and potential outcomes are identified.

Screening

Purpose. The purpose of **screening** is to help ensure that CACG system use is appropriate for the needs of the individual.

Key counseling functions. During **screening**, practitioners obtain information from the individual, formulate hypotheses about individual needs, and make recommendations about the use of service delivery options and information resources (including the CACG system) that are likely to assist the individual in meeting his or her needs.

Potential outcomes. After completing **screening**, the individual should have established a relationship with the practitioner that is appropriate for the nature of the service delivery setting, clarified his or her career decision-making needs, understand how his or her needs can be potentially met, and have an initial plan for using the CACG system and other career resources and services.

Orientation

Purpose. The purpose of **orientation** is to help ensure that individuals make effective use of system capabilities by promoting a realistic understanding of the potential benefits, limitations, and functioning of the system in relation to their needs.

Key counseling functions. During **orientation**, practitioners disseminate information about the CACG system and relate the functioning of the system to specific individual needs.

Potential outcomes. After completing **orientation**, the individual should be better prepared conceptually to use the CACG system and more confident that he or she is capable of successful system use.

Follow-Up

Purpose. The purpose of **follow-up** is to help ensure that individuals have appropriately used CACG features to meet their previously identified needs and they have a plan for future action.

Key counseling functions. During **follow-up**, practitioners continue the relationship development process as appropriate, monitor individual use of the CACG system (paying particular attention to potential inappropriate use of the system and potential negative thinking about career choice), reexamine individual needs and make appropriate recommendations for further use of the system and additional resources and services as needed, and discuss how their current decision-making process can be generalized to future career decisions.

Potential outcomes. After completing **follow-up**, the individual should have fully used the features of the CACG system to meet his or her career decision-making needs. The individual should also have an understanding of the amount of progress that has been attained in meeting his or her needs, and an understanding of the additional resources and services that can be used to complete the career decision-making process. The individual also should understand the career decision-making process well enough to be better prepared for future career choices.

Potential Counseling Interventions for Screening

Consider the following interventions when conducting a **screening** for CACG system use.

- Assess the individual's readiness for career decision making by briefly clarifying the individual's reasons for seeking career services (brief screening). If the practitioner judges the individual's reasons to be concrete and not reflecting any problems with decision making, then the individual could gain access to the CACG system via a self-help mode. If the individual's reasons for seeking career services appear to be unfocused, unrealistic, or reflecting problems with decision making, then the practitioner would proceed with a careful needs assessment (comprehensive screening).

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 (Sampson, 1997, p. 8).

Using such a brief approach to readiness assessment assumes that staff occasionally interact with individuals during CACG system use to inquire if the individual's needs are being met. If an individual indicates verbally or nonverbally that they are experiencing difficulty, then a more thorough screening may be provided to clarify the needs of the individual (Sampson, 1997). This proactive behavior by staff provides a "safety net" for individuals with needs that were more substantial than initially recognized by either staff or the individual.

If a comprehensive screening appears necessary, the practitioner obtains appropriate background information and administers a brief screening instrument to further determine readiness for career decision making and use of career services (Sampson & Reardon, 1997). The practitioner also clarifies the individual's level of stress related to life transitions, concurrent use of other counseling services, and prior experience with career guidance services (including CACG systems).

- Establish a relationship with the individual that is appropriate for the type of service delivery organization by using effective communication and relationship skills. For example, both counselors and librarians establish relationships with individuals. However, the nature and extent of the relationship that is developed differs according to the manner in which services are typically delivered by counselors and librarians.
- Decide if a CACG system is an appropriate resource in view of the individual's needs and readiness.

Does the CACG system provide assessment, information, or instruction that meets a specific individual need?

Is a level of support available that fits the individual's readiness for career decision making? Are brief staff-assisted services available for individuals with moderate readiness and are individual case-managed services available for low readiness individuals?

Is the individual likely to have the reading ability necessary to effectively use the CACG system?

Is the individual likely to have the motivation necessary to make effective use of the system?

Does the individual have the physical ability to see the computer display and manipulate the computer keyboard (if no adaptive devices are available for individuals with physical disabilities)?

Does the individual have a level of emotional stability that allows him or her to think clearly enough to understand system functioning and to respond accurately and consistently to system requests for information?

If the answer to any of the above questions is “no,” then alternative resources are identified or an appropriate referral is made to another service provider.

- Recommend a level of CACG support that is congruent with individual readiness for career choice and career services, e.g., brief staff-assisted services (e.g., group counseling, workshops, or self-directed career decision making) or individual case-managed services (e.g., individual counseling or career courses with small group interaction).
- Recommend use of specific CACG system features that would be appropriate given the needs, characteristics, and readiness of the individual, e.g., self-assessment of interests, completion of a transferable skills analysis, identification of occupational options, or review of information. This can be accomplished by indicating appropriate CACG system features on an individual learning plan (Peterson, Sampson, & Reardon, 1991; Peterson, Sampson, Reardon, & Lenz, 1996) or on a counseling contract. Structuring the initial use of a CACG system is especially important for individuals who are unfamiliar with typical career service delivery, are anxious about decision making or receiving services, and/or are overwhelmed with the process of career decision making. An alternative strategy would be to recommend that the individual begin with the needs assessment component of the CACG system (if this component is available), which will suggest a recommended sequence of system components based on individual responses to brief needs assessment questions.
- Help individuals understand which of their needs can be potentially met by the CACG system, and which of their needs can be potentially met by other information resources (e.g., information interviews and volunteer work experience) and/or other services (e.g., personal or family counseling).
- Influence individual expectations so that he or she believes that:
 - (1) Successful career decision-making is generally possible (without "guaranteeing" success for the individual);
 - (2) The practitioner is competent to assist the individual with career problem solving and decision making;
 - (3) The practitioner is concerned about the welfare of the individual as demonstrated by effective communication and relationship building skills; and
 - (4) He or she is capable of and will follow-through on decision making tasks, e.g., completion of assigned CACG features and review of information resources.

Potential Counseling Interventions for **Orientation**

Consider the following interventions when conducting an **orientation** for CACG system use. Some of these interventions can be presented via print materials or video resources created by local practitioners or the CACG system developer. Some interventions may be omitted due to variations in CACG system content. Some interventions may not be necessary given the needs of the individual. It is important to avoid overwhelming the individual with more information than he or she can understand and use.

- Briefly explain, or provide access to, general information about the CACG system. Potential points to include are as follows:
 - (1) The fact that prior experience with computers is not required for successful CACG system use;
 - (2) The user friendly aspects of the CACG system (e.g., ease of data input, help features);
 - (3) The range of time that individuals typically spend using the system;
 - (4) The confidentiality of computer record keeping procedures;

- (5) The potential benefits and limitations of using the system;
 - (6) The potential individual misconceptions that a CACG system will provide a "test" measuring occupational success, a "magical" answer for solving career problems, or that the computer can be the "sole" information resource for career decision-making;
 - (7) The importance of obtaining recommended printouts to provide individuals with a stimulus to think about career choice between CACG sessions and to provide practitioners with information to clarify issues during counseling sessions;
 - (8) The availability of CACG support resources, such as videos, guides, and exercises; and
 - (9) The availability of supplemental information resources, e.g., information contained in a career library, and career services, e.g., a workshop on identifying employment opportunities, that the individual may choose to use.
- Briefly explain, or provide access to, information about the assessment component of the CACG system. An initial recommended sequence for individual use of the system may not necessarily begin with assessment. For example, with some individuals it may be appropriate to review occupational aspirations in the occupational information component as a preparation for enhanced use of the assessment and search for options components of a system. This option should be included in orientation content. Potential points to include in an assessment orientation include:
 - (1) The potential benefits and limitations of using self-assessment and standardized instruments as a basis for exploring options;
 - (2) The nature of CACG system assessment variables (e.g., values, interests, skills, and labor market constructs) and how these variables relate to career decision making; and
 - (3) If negative thinking is a barrier to accurate assessment, help the individual to identify inappropriate thoughts and substitute more appropriate thoughts.
 - Briefly explain, or provide access to, information about the search for options component of the CACG system that is used to generate occupations. Potential points to include in a search for options orientation include:
 - (1) The process for identifying occupations in terms of search logic and CACG system functioning [The CACG professional manual may provide appropriate background information].
 - (2) The importance of an exploratory (even playful risk-taking) attitude resulting in the generation of diverse lists of occupations in the system. This attitude enables the individual to fully use the search capabilities of the CACG system to provide an adequate number of potential options that match the individual's values, interests, and skills. This attitude also helps individuals to understand the cause and effect relationships associated with personal preferences and occupational opportunities, e.g., understanding that most occupations that provide high income, leadership, and autonomy also require considerable educational attainment.
 - (3) The usefulness of taking time to reflect upon what the individual has learned in using the assessment and search for options components of a CACG system before continuing on with further use of the system. By first taking time to review printouts, e.g., considering the accuracy of assessment and evaluating the potential appropriateness of occupations generated by the computer, the individual is better prepared to discuss his or her progress with a practitioner. In some cases it may be necessary to repeat self-assessment and search features prior to obtaining occupational information.
 - Discuss a strategy for identifying which occupations, obtained as a result of using the CACG search for options component, are suitable for detailed exploration in CACG information delivery, e.g., suggesting occupational information screening criteria such as work tasks, income, education required, etc., to evaluate "marginal"

occupations for potential appropriateness before examining occupations that have "face validity." If appropriate, apply a similar strategy for educational institutions, financial aid options, or employers.

- Briefly review the functioning of the information delivery component of the CACG system, paying particular attention to using information to eliminate potentially inappropriate options. Also, focus on any system features that relate specifically to individual needs.
- For those occupations that the individual wants to explore in a detailed manner, suggest additional options for obtaining information, e.g., other CACG system components, other CACG systems, Internet resources, CD-ROM resources, print and audio-visual media, information interviewing, shadowing, work simulations, and work experience.
- Discuss the potential limiting nature of stereotypes in order to avoid inappropriate restriction of exploration due to invalid individual perceptions.
- Review the individual's intended process for narrowing his or her list of viable career, educational, financial aid, and employment options.
- Encourage the individual to reduce his or her original list of occupational options generated by the search for options component of the CACG system (and/or other sources) to a manageable number (two to three options, with maximum of five to six) that have the greatest likelihood of being congruent with his or her self-knowledge (e.g., values, interests, and skills).
- Briefly review the functioning of the instruction component of the CACG system, focusing on any system features that relate specifically to individual needs.
- Review potential personal and environmental factors with the individual that relate to career choice:
 - (1) external constraints that influence the time frame for making a decision, e.g., unemployment;
 - (2) the influence of family members and friends on the choice process;
 - (3) the potential impact of various occupational choices on family members;
 - (4) the influence of the individual's cultural group or community on the choice process;
 - (5) the level of individual anxiety related to the choice process;
 - (6) the decision-making style of the individual; and
 - (7) the availability of, and costs associated with, various educational and training options.
- Briefly review potential criteria for final evaluation and selection of an occupation, e.g., cost vs. benefits or chances of success vs. desirability.
- Introduce the concept of secondary occupational choice if the individual's primary choice becomes unattainable as a result of:
 - (1) failure to obtain entry into an appropriate preparation program;
 - (2) failure to complete a preparation program;
 - (3) failure to obtain employment; or

- (4) the primary choice becoming inappropriate, e.g., through change in the individual's values, interests, or skills as a result of reality testing, change in health, change in family situation, or change in the economy.
- Briefly review the functioning of the action planning component of the CACG system, focusing on any system features that relate specifically to individual needs.
 - To assist the individual in developing his or her action plan, review personal and environmental factors that may influence developing a plan, e.g., time constraints, family variables, anxiety, decision-making style, and available financial and human resources.
 - Introduce the concept of reality testing for the individual's primary and secondary occupational choices as part of his or her action plan.
 - If for some reason the individual is unable to continue receiving services due to economic or situational factors, make an appropriate referral or discuss an appropriate strategy that the individual can use in obtaining future career decision-making assistance.

Potential Counseling Interventions for **Follow-Up**

Consider the following interventions when conducting a **follow-up** of CACG system use.

- Ask the individual to describe the nature of his or her experience with the CACG system (a neutral stimulus), and note any misconceptions the individual has about the system or about the decision-making process, any negative thinking about self, and/or any stereotypical thinking about occupations.
- Help the individual to identify and correct any of the above misconceptions, negative thinking, or stereotypes.
- In particular, help the individual to identify and correct any negative thinking related to evaluating themselves in relation to the requirements associated with various occupations presented in the information delivery component of the CACG system.
- Review the individual's use of the CACG system (as indicated by his or her printouts) to identify any errors, inconsistencies, or misperceptions related to system use that need correcting, and to determine if future system use needs to be modified to better meet individual needs. The CACG system professional manual may provide suggestions for interpreting individual printouts and for identifying potential problems.
- If the individual requires access to additional occupational, educational, financial aid, or job search resources, assist the individual in locating and using the resources.
- Help the individual to review his or her progress toward meeting the needs that originally led the individual to seek career assistance. If the original needs, or subsequently identified needs, are still unmet, recommend the use or reuse of specific CACG system components or features.
- Given that in most cases the individual's career decision-making process will not be complete, recommend appropriate academic and/or community resources and services for completing the career decision-making process. This continuing effort may include beginning a preparation program (e.g., on-the-job training, vocational training, or college degree), engaging in reality testing (e.g., courses, volunteer work, co-operative education, and/or part-time employment), and beginning the job placement process (Peterson et al., 1991; 1996).
- Assist the individual in understanding how the decision-making model inherent in the CACG system (if any) can be generalized to future career decision-making.

How CACG Counseling Interventions Vary

Each individual has unique career problems and is best served by using unique combinations of career resources and services in making career decisions (Peterson et al., 1991; 1996). Rigid application of any model of counseling intervention, including the one described in this paper, is likely to reduce effectiveness or increase costs, or both. This section will describe how counseling interventions can vary by intervention type, decision-making status, and available technology.

Variations Related to Career Interventions

The cost-effectiveness of career service delivery depends upon the level of staff support meeting, but not exceeding, the needs of the individual. As stated previously, individuals with high readiness for career decision making have the potential to be most cost-effectively served by self-help services. Individuals with moderate readiness for career decision making have the potential to be most cost-effectively served by brief staff-assisted services, while low readiness individuals are potentially best served by individual case-managed services. The readiness of an individual for career decision making can be determined by simple screening questions (brief screening), and if needed, practitioner interpretation of quickly administered, hand scorable screening instruments (comprehensive screening) (Sampson & Reardon, 1997). Table 2 identifies different career intervention options for delivering self-help services, brief staff-assisted services, and individual case-managed services.

(1) **Self-help services.** Self-help services are more likely to be cost-effective for individuals with a high readiness for career decision making. This level of service does not include the maintenance of individual counseling records and places no emphasis on regular systematic monitoring of individual progress. Successful use of CACG systems in a self-help mode depends on:

- (1) Accurately assessing user needs during brief screening to ensure that there is a reasonable likelihood that CACG system use will meet the individual's needs;
 - (2) The availability of an effective "safety net" that provides reasonable opportunities for identifying individuals who are not making successful use of a CACG system, e.g., brief periodic checking with users;
 - (3) The availability of staff to schedule appointments for system use and to answer basic questions about system functioning, e.g., instructions for obtaining printouts, supplying needed computer paper;
 - (4) The availability of easy-to-understand text and computer-based support materials and signage to direct CACG system users to supplemental assessment, information, and instructional resources as well as supplemental services; and
 - (5) The availability of supplemental text and multimedia resources that are self-instructional and easy to use.
- Self-help career services involve **self-guided** use of self-assessment, information, and instructional resources in a **library-like** or **remote setting**, where resources have been designed for independent use by individuals with a **high** readiness for career decision making who need **little** or **no** assistance to effectively use career resources.

Guiding and monitoring the selection and use of resources by individuals is the responsibility of the practitioner in brief staff-assisted and individual case managed service delivery. In self-help career services the guiding and monitoring function is the responsibility of the individual with support provided within the resources being used. Effective self-help resources are designed to help users understand when and how the resource should be used. Well designed self-help resources also help individuals identify when problems are occurring in the use of the resource and understand the further resource use or additional assistance that maybe need to resolve the problem. When CACG systems are used in a self-help mode, system components for needs assessment, recommended use, and instruction, along with help features, assist individuals in guiding and monitoring the use of the system. Text and other computer-based support materials and signage can be used to guide individuals in appropriately sequencing a CACG system among the specific resources necessary to meet their needs.

(2) **Brief staff-assisted services.** Brief staff-assisted services are more likely to be cost-effective for individuals with moderate readiness for career decision making. This level of service typically places less emphasis on the maintenance of individual counseling records and regular systematic monitoring of individual progress. Successful use of CACG systems in a brief staff-assisted mode depends on:

- (1) Accurately assessing user needs during comprehensive screening to ensure that there is a reasonable likelihood that CACG system use will meet the individual's needs;

- (2) The availability of an effective “safety net” that provides reasonable opportunities for identifying individuals who are not making successful use of a CACG system, e.g., brief periodic checking with users; and
 - (3) The availability of staff to schedule appointments for system use and to answer basic questions about system functioning, e.g., instructions for obtaining printouts, supplying needed computer paper.
- Self-directed career decision making involves **practitioner-guided** use of self-assessment, information, and instructional resources in a **library-like setting** by individuals with a **moderate** readiness for career decision making who need **minimal** assistance to effectively use career resources.

Self-directed career decision making can be used to cost-effectively deliver career guidance interventions (Reardon, 1996), including CACG support. The availability of practitioners in a library-like setting allows modeling of information seeking behavior and the provision of timely encouragement and reinforcement of client exploratory behavior (Sampson & Reardon, 1997). Practitioner availability also provides users with opportunities for relatively immediate CACG follow-up and orientation while the experience is still recent. Experience has also shown that CACG counseling interventions in the self-directed career decision-making mode tend to be more successful when practitioners make specific recommendations about system components and features that relate to identified user needs.

- Career course (with large group interaction) involves **instructor-guided** use of assessment, information, and instructional resources in a **classroom setting** with **minimal** opportunity for interpersonal interaction among individuals with a **moderate** readiness for career decision making who need **minimal** assistance to effectively use career resources.

The completion of specific CACG components and features can be used as student assignments in a career course. Screening is accomplished by students self-selecting to register for the course or by having an advisor or instructor recommend the course. Faculty grading of student assignments (e.g., completion of CACG system components and features) provides the “safety net” to identify students who may have low readiness for career decision making and who therefore may need more individual assistance. CACG orientation can be provided in class or by assigned orientation videos. General CACG follow-up can be provided via class discussion. CACG system components and features can be individualized through student learning contracts or the same CACG key components and features can be assigned for all students in a predetermined order.

- Group counseling (short term) involves **practitioner-guided** use of assessment, information, and instructional resources in a **group setting** with **minimal** opportunity for sharing information or for developing group cohesion among individuals with a **moderate** readiness for career decision making who need **minimal** assistance to effectively use career resources.

Screening for CACG system use can occur at the same time screening for group membership occurs. The use of video resources for CACG orientation minimizes using valuable group processing time for didactic presentations of orientation information. Group sessions can be used as a follow-up activity to process the insights and barriers group members experience in the use of career resources. It is important that group leaders be competent to respond to member questions from CACG system printouts. CACG system components and features can be used as one of many resources available to career counseling group members. Or, if a more structured group approach is used where all members use a common set of career resources, group sessions can be used for follow-up by processing members’ experience in using specific CACG components and features.

- Workshops involve **practitioner-guided** use of assessment, information, and instructional resources in a **group setting** with **little** or **no** opportunity for sharing information or for developing group cohesion among individuals with a **moderate** readiness for career decision making who need **minimal** assistance to effectively use career resources.

Screening is accomplished by individuals self-selecting to attend the workshop or by having a practitioner recommend the workshop. If the workshop has a specific topic focus, such as adults in career transition, orientation and follow-up interventions can be delivered to accompany predetermined CACG system components and features.

For example, a workshop on adults in career transition might include specific orientation and follow-up for a CACG transferable skills analysis. If the workshop has a more general focus, orientation can be provided to popular CACG system components, with follow-up dependent upon whatever components and features are used by particular workshop participants. In comparison with group counseling, interactions among participants are less emphasized in workshops.

(3) Individual case-managed services. Individual case-managed services are more likely to be cost-effective for individuals with low readiness for career decision making. This level of service typically places more emphasis on the maintenance of individual counseling records and regular systematic monitoring of individual progress. Successful use of CACG systems in an individual case-managed mode depends on:

- (1) Accurately assessing user needs during comprehensive screening to ensure that there is a reasonable likelihood that CACG system use will meet the individual's needs;
- (2) The availability of staff to schedule appointments for system use and to answer basic questions about system functioning, e.g., instructions for obtaining printouts, supplying needed computer paper; and
- (3) The availability of practitioners who are competent to integrate career and mental health counseling in dealing with individual's low readiness for career decision making.

- Individual counseling involves **practitioner-guided** use of assessment, information, and instructional resources in an **individual office setting** with individuals who have a **low** readiness for career decision making who need **substantial** assistance to effectively use career resources.

Individual counseling offers maximum flexibility in relating counseling interventions to the needs of the individual. The timing and content of CACG orientations and follow-up can vary considerably among clients. The nature of individuals' use of a CACG system provides practitioners with information about factors that may be contributing to low readiness for career decision making. For example, individuals' comments about their system printouts may indicate specific negative self-talk that can be identified, challenged, and altered. The nature of the supportive relationship established between the practitioner and the client over time may be a key element in client willingness to risk the inevitable change associated with decision making.

- Career course (with small group interaction) involves **instructor-guided** use of assessment, information, and instructional resources in a **classroom setting** with **considerable** opportunity for interpersonal interaction among individuals with a **low** readiness for career decision making who need **substantial** assistance to effectively use career resources.

The previously described counseling interventions for a career course (with large group interaction) apply here as well. The difference is that by meeting with small groups of students, instructors have the opportunity to gain more information about the nature of student decision-making difficulties and can provide more assistance to students in improving their readiness for career choice. Dividing the class into small groups of students can improve the capability of students to learn from each other via modeling and encouragement.

- Group counseling (long term) involves **practitioner-guided** use of assessment, information, and instructional resources in a **group setting** with **considerable** opportunity for sharing information and the development of group cohesion among individuals with a **low** readiness for career decision making who need **substantial** assistance to effectively use career resources.

The previously described counseling interventions for group counseling (short term) apply here as well. The difference is that the longer duration of the group allows the development of group cohesion necessary to confront and change typically long established problematic patterns of thinking, feeling, and behaving. The longer duration of the group also provides potential support over a larger proportion of the decision-making process, e.g., supporting members in following through on an action plan to implement their choice.

Table 3 summarizes variation in career interventions by level of service delivery and characteristics.

Variations Related to Decision-Making Status

The decision-making status of individuals can be conceptualized as decided, undecided, or indecisive. Decided individuals are able to specify a career choice, but seek to confirm or implement their choice. Undecided individuals are not able to specify a choice as a result of lacking the self, occupational, and/or decision-making knowledge they need to choose (developmental) or having an overabundance of talents, interests, and opportunities that makes choosing more difficult (multipotential). Indecisive individuals have substantial difficulty in making choices due to their lack of knowledge combined with a maladaptive approach to problem solving in general (Peterson et al., 1996).

A CACG system may be an appropriate resource for all of the types of individuals identified above. Decided and undecided individuals are often best served by self-help and brief staff-assisted interventions. In general, practitioners would rarely sit with a decided or undecided individual while he or she used a CACG system. Indecisive individuals are often best served by individual case-managed interventions. Practitioners may occasionally sit with an indecisive client to help him or her to monitor negative self-talk that may be limiting readiness for career decision making.

Variations Related to Available Technology

Communications technology can be used to deliver some, or all, of the counseling interventions described in this paper. Practitioners can use two-way communication via telephones to provide counseling interventions to clients in remote locations. As videoconferencing becomes more available, this resource can improve communication by providing visual as well as audio information to the practitioner and the CACG system user (Sampson, Kolodinsky, & Greeno, 1997). Repetitive orientation information can be cost-effectively disseminated via video resources created by local practitioners or the CACG system developer.

Conclusion

CACG systems deliver assessment, information, and instructional resources that individuals need to make informed career decisions. Experience and research have shown that individuals need varying amounts of assistance to make effective use of CACG systems, ranging from no help to substantial support. Given the increasing demand for career services, practitioners need to wisely allocate scarce counseling resources. With brief screening as a foundation, practitioners can provide a variety of cost-effective counseling interventions to individuals with varying needs. The screening, orientation, and follow-up model presented in this paper can be a starting point for considering options for CACG counseling interventions.

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Table 1
 Typical CACG System Components and Related Potential User Outcomes

CACG System Components	Potential Outcomes of CACG Use
User needs assessment and subsequent recommendations for system use (Needs Assessment and Recommended Use)	Development of a specific plan for using a CACG system to effectively meet identified needs Improved confidence in decision-making ability
Assessment of psychological constructs (e.g., values, interests, and skills) and labor market constructs (e.g., preference for indoor work) (Assessment)	Enhancement of self-knowledge necessary for generating and evaluating options
Generation of occupational, educational, financial aid, and employment options (Search for Options)	Identification of options for further exploration Expansion of occupational aspirations
Delivery of occupational, educational, financial aid, and employment information (Information Delivery)	Enhanced occupational, educational, financial aid, and employment knowledge necessary for evaluating and narrowing options
Instruction in effective career, educational, and employment decision making (Instruction)	Enhanced user understanding of the nature of career development (e.g., clarifying a schema for organizing occupations, clarifying barriers, clarifying adult roles and transitions) Enhanced user understanding of the career decision-making process Enhanced user understanding of the employment process, including job search, resume writing, and cover letter writing skills
Development of an action plan for implementing a career choice (Action Planning)	Increased likelihood of following through with the steps necessary to effectively implement a choice

Table 2
 Intervention Options for Delivering Three Levels of Career Services

Self-Help Services	Brief Staff-Assisted Services	Individual Case-Managed Services
Self-help career services	Self-directed career decision making	Individual counseling
	Career course (with large group interaction)	Career course (with small group interaction)
	Group counseling (short term)	Group counseling (long term)
	Workshops	

Table 3
 Variation in Career Interventions by Level of Service Delivery

	Self-help services	Brief staff-assisted services	Individual case-managed services
Readiness of the user	High	Moderate	Low
Assistance provided	Little or none	Minimal	Substantial
Who guides resource use	The user	A practitioner	A practitioner
Where services are provided	Library-like or remote settings	Library-like, classroom, or group settings	Individual office, classroom, or group settings
Selection and sequencing of resources and services	Resource guides	Individual learning plans	Individual learning plans
Record keeping	Aggregate data for program evaluation and accountability	Aggregate data for program evaluation and accountability	Individual records