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ABSTRACT

The purpose of this research was to compare two widely used computer-assisted career guidance (CACG) systems, DISCOVER and System of Interactive Guidance and Information (SIGI). The goals were to: (1) assist practitioners in learning more about the benefits of using a CACG system as a component of total program services; (2) assist CACG system developers in revising software and support materials to more fully meet the needs of practitioners and users; and (3) assist researchers in planning further investigations concerning the optimal use of this technology. The first study examined the effects of DISCOVER and SIGI on occupational certainty, vocational identity, career exploration, and decision making style of 109 college students. Students were randomly assigned to either DISCOVER, SIGI, or a control condition that involved unstructured use of materials in a university career center. Analyses failed to reveal significant differences among groups on the dependent measures. The second study used the same population to examine the social influence of DISCOVER and SIGI. User perceptions of expertness, attractiveness, and trustworthiness were compared between users of DISCOVER, SIGI, and a control group of nonusers. Findings showed that DISCOVER and SIGI users had more positive perceptions of the attractiveness of systems than nonusers, indicating one effect of system use. It was also found that users attributed high levels of expertness, attractiveness, and trustworthiness to the computer systems, sometimes exceeding levels attributed to effective counselors. The evaluation instruments and 40 references are attached. (LLL)

The Impact of DISCOVER and SIGI on the Career Decision Making of College Students: Technical Report No. 5

by

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February, 1987

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Introduction

The purpose of this research was to compare two widely used computer-assisted career guidance (CACG) systems, DISCOVER and SIGI. The goals were to: 1) assist practitioners in learning more about the benefits of using a CACG system as a component of total program services; 2) assist CACG system developers in revising software and support materials to more fully meet the needs of practitioners and users; and 3) assist researchers in planning further investigations concerning the optimal use of this technology. This technical report includes three separate studies designed to answer three different research questions. A sample of undergraduate psychology students was used for all three studies. The three studies included in this technical report are:

Study No. 1:
The impact of computer-assisted and traditional career guidance services on the occupational certainty, vocational identity, career exploration, and decision making style of college students.

Study No. 2:
The impact of two computer-assisted career guidance systems on college student's perceptions of the counselling dimensions of computer interaction.

The Impact of Computer-Assisted and Traditional Career Guidance Services on the Occupational Certainty, Vocational Identity, Career Exploration, and Decision Making Style of College Students

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Abstract

A study was conducted to examine the effects of DISCOVER and SIGI on occupational certainty, vocational identity, career exploration, and decision making style of 109 college students. The study was designed to correct for 7 previously noted weaknesses of research on computer-assisted career guidance (CACG) systems. Students were randomly assigned to either DISCOVER, SIGI, or a Control Condition that involved unstructured use of materials in a university career center, and completed the Occupational Alternatives Question, My Vocational Situation, the Assessment of Career Decision Making - Style Scale, the Career Exploration Survey, and an instrument used to verify treatment and control conditions. Each dependent measure was linked to specific CACG objectives. An extensive series of univariate and multivariate statistical analyses failed to reveal significant differences among groups on dependent measures at pre-, post-, or follow-up testing. Discussion of these results explored the lack of efficacy of limited CACG interventions, and problems in using student volunteers as systems users.

Background

Over the past ten years there has been an increasing demand for career guidance services at the college level. Computer-assisted career guidance (CACG) systems have evolved as one response to this growing need for services by providing college students with assistance in acquiring knowledge of self and the world of work, identifying potentially appropriate occupations, and formulating a plan to achieve their career goals. Institutions have used CACG systems as a component of career resource centers, individual and group counseling, and curricular and workshop interventions. Both DISCOVER for Schools (developed by the American College Testing Program and hereafter referred to as DISCOVER) and the System of Interactive Guidance and Information (SIGI) (developed by the Educational Testing Service) have been used extensively in postsecondary settings.

DISCOVER is designed to increase decision-making skills, vocational maturity, specification of career plans, knowledge about occupations and educational institutions, and self-knowledge concerning interests, abilities, and values (Maze & Cummings, 1982). The four modules of DISCOVER involve: 1) self-assessment, 2) structured search of occupational alternatives, 3) presentation of occupational information, and 4) structured search of educational alternatives and presentation of educational information. Recent studies indicate that DISCOVER has been effective in exerting a positive influence on the career planning process by increasing the use of career resource materials (Garis & Swails, 1983); improving career development attitudes (Kapes, Borman, & Kimberly,1985); increasing career planning knowledge (Penn, 1981); and increasing confidence in educational and career plans (Rayman, Bryson, & Bowlsbey, 1978). Other studies indicate that DISCOVER has no significant positive effect on increasing occupational knowledge or competency in career decision making (Garis & Swails, 1983), or on career maturity knowledge (Kapes, Borman, & Kimberly, 1985).

SIGI is designed to help students examine their values, identify and explore options, receive and interpret relevant occupational data, and master strategies for making informed and rational career decisions (Katz, 1973, 1980). The five SIGI subsystems include: 1) VALUES, 2) LOCATE, 3) COMPARE, 4) PLANNING, and 5) STRATEGY. SIGI has been effective in increasing career preparedness (Neumann, 1978); encouraging career search behavior (Davis & Dickson, 1980); increasing career maturity (Pyle & Stripling, 1976); improving career decision making skills (Chapman, Katz, Norris, & Pears, 1977; Cochran, Hoffman, Strand, & Warren, 1977; Riesenberg, 1980); enhancing confidence in educational and vocational planning (Risser & Tulley, 1976); and in decreasing the level of undecidedness (Salters, 1984). However, SIGI has been shown to have no significant impact on improving career maturity (Devine, 1976; Fadden, 1983).

The developers of DISCOVER and SIGI have recommended methods for integrating their systems into an ongoing guidance program. These suggestions range from using the systems in conjunction with a counseling or curricular intervention, to using the systems on a "stand alone" basis without counselor intervention. Indeed, the growing demand for more career guidance services combined with the institutional need to reduce costs of these services (especially salary costs) may result in increased use of CACG systems on a "stand alone" basis. While the developers of both DISCOVER and SIGI recommend the integration of their respective systems with counselor intervention as a preferred approach, they also recommend the use of these systems on a stand alone basis.

The American College Testing Program (1983) provides the following directions for "stand alone" use of DISCOVER:

> **Method 1: "Stand Alone" Use**
> The User signs on to the system and selects any parts desired for use. No counselor support is provided before, during, or after use. DISCOVER is designed so that such use is possible and and is monitored by the computer. Clear and adequate instructions are provided both in the User Guide and in the software itself; in this way no additional support should be required to instruct the individual how to use the software (p. 1).

Regarding the integration of SIGI into a guidance program, Chapman, Katz, Norris, and Pears (1977, p. 14) state, "SIGI should also be made available to students ad libitum." The validity of the "stand alone" approach is based in part on the assumption that information presented on the computer terminal and in available guides provides adequate guidance for users to select a strategy for using the numerous options available to meet their career decision making needs.

Purpose of the Study

Given the likelihood that the "stand alone" approach to using CACG systems will increase, it is desirable to learn more about the efficacy of this type of intervention. Prior studies comparing the effectiveness of DISCOVER and SIGI included substantial amounts of counselor intervention via a career development course (Kapes, Borman, Garcia, & Compton, 1985; Kapes, Borman, & Kimberly, 1985) and individual counseling (Splete, 1984; Splete, Elliott, & Borders, 1985). This study sought to determine the comparative effectiveness of DISCOVER and SIGI, when used with minimal counselor assistance, and a noncomputer-based control condition. A minimal amount of counselor intervention was provided with the aim of limiting treatment costs while still meeting minimal ethical requirements for using computer applications in counseling and guidance. The purpose of the study was to determine if such use of DISCOVER and/or SIGI were more effective than a control condition in

facilitating the (1) occupational certainty, (2) vocational identity, (3) career exploration, and (4) decision making style of college students.

The study was designed to correct for some of the limitations of prior CACG research: (1) the lack of congruence of dependent measures to CACG system goals (Cairo, 1983); (2) the lack of direct comparisons of the effectiveness of various systems (Cairo, 1983; Parish, Rosenberg, & Wilkinson, 1979); (3) the use of research designs without longitudinal components (Clyde, 1979); and (4) the lack of random assignment to treatment groups, the lack of control conditions, the lack of standardized dependent measures, and the lack of data on the reliability and validity of instrumentation (Spokane & Oliver, 1983).

Methodology

Sample

A sample of 109 students from an introductory undergraduate psychology course was obtained. Students received partial course credit for participating in the study. A summary of student demographic data for each treatment condition is provided in Table 1. The mean age of students was 18.8 years (SD=3.1) with 69% being female and 73% white, 11% Native American, 7% black, 7% other. The majority of students were freshmen (73%) and the three most popular declared majors were business (32%), nursing (8%), and psychology (8%); 10% were undecided majors. Some students reported prior career services experience: individual counseling, 29%; career course, 6%; and some type of CACG system, 16%.

Instrumentation

Instruments were selected on the basis of their congruence with an evaluation standard for computer-assisted career guidance systems (Sampson & Peterson, 1984). This evaluation standard consists of a series of aims and objectives common to DISCOVER and SIGI in particular and most "guidance" type CACG systems in general. Chapman (1975), Gelatt (1962), Harris-Bowlsbey (1983a; 1983b), Katz (1966; 19738), Katz and Shatkin (1983), Sampson, McMahon, and Burkhead (1985), and Super (1973), provided the conceptual basis for developing the evaluation standard. Each dependent measure in the study was judged by the investigators to relate to one or more of the following objectives:

1) To assist individuals in **developing** their career decision making skills.
2) To assist individuals in **clarifying** their values, interests, and abilities as they relate to career decision making.
3) To assist individuals in **identifying** potentially satisfying occupations congruent with their values, interests, and abilities.
4) To assist individuals in **acquiring** an understanding of the world of work.

5) To assist individuals in **integrating** their understanding of self and the world of work, such that they are capable of making a tentative occupational choice that is both rewarding and realistic.
6) To assist individuals in **formulating** a systematic plan of action for implementing their occupational choice (Sampson & Peterson, 1984, p. 1).

The Occupational Alternatives Question (OAQ) (Zenner & Schnuelle, 1972; modified by Slaney, 1978; 1980) measures occupational certainty, and relates to objectives 1, 3, and 5 above. Test-retest reliability for the OAQ was reported at .93 (Redmond, 1973) and found to be stable over a six week period (Slaney, 1978). Concurrent validity was demonstrated by Slaney, Stafford, and Russell (1981).

My Vocational Situation (MVS) (Holland, Daiger, & Power, 1980a) measures vocational identity, the perceived need for for information, and perceived barriers to career decision making, and relates to objectives 2, 4, and 5 above. Holland, Daiger, and Power (1980b) presented scale reliabilities (KR 20) ranging from .23 to .86, with the Identity Scale demonstrating the highest degree of internal consistency. Construct validity for the MVS was demonstrated by Holland, Daiger, and Power (1980b).

The Assessment of Career Decision Making - Style Scale (ACDM-S) (Harren, 1978) measures three decision making styles: rational, intuitive, and dependent, and relates to objective 1 above. Test-retest reliability for the ACDM-S was reported at .84 by Harren, Kass, Tinsley, and Moreland (1978). Factorial validity of the Style Scale has been demonstrated by Phillips, Friedlander, Pazienza and Kost (1984).

The Career Exploration Survey (CES) (Stumpf, Colarelli, & Hartman, 1983) measures career search behaviors, reactions to exploration, and beliefs about exploration, and relates to objective 4 above. Coefficient alpha estimates of reliability range from .70 to .92 across the 16 scales.

The DISCOVER Progress Record, The SIGI Progress Record, and the CCIS Log (Reardon, 1984a) (see Appendices A, B, & C) were designed to verify the extent to which DISCOVER, SIGI, and the control condition were actually used by students. Basic demographic data and information related to students' prior experience with career counseling services, including computer applications, was also used (Reardon, 1984b) (see Appendix D).

Procedures

The 109 students were randomly assigned to either a DISCOVER group (n=37), a SIGI group (n=33), or a control group (n=39). The study was conducted at a university career resource center. Students in the DISCOVER and SIGI groups were encouraged to use supplemental audio-visual and print-based career information materials as part of the treatment and were asked not to use

other available CACG systems in the center until the data collection was completed. Students using DISCOVER were asked to complete the first three modules of the system, while students using SIGI were asked to complete all five subsystems. Students in the control group were asked to schedule three hours in the career center. They were invited to study, read, or make unstructured use of the audio-visual and print-based career information materials in the career resource center. As with the prior two groups, students in the control group were asked not to use other available CACG systems until the data collection was completed.

All students attended a group specific orientation meeting (see Appendix E) where: 1) an overview of the study was provided; 2) a research participation release form (see Appendix F), a demographic questionnaire, and the OAQ were completed (the control group also completed the MVS, and the ACDM-S; 3) an introduction to the purpose, operation, and procedures associated with DISCOVER, SIGI, or the control condition was provided; 4) an explanation of data collection procedures was presented; 5) initial appointments were scheduled for DISCOVER or SIGI, and 6) a tour of the career resource center, including the location of relevant resources, was completed. All three groups were encouraged to ask questions, obtain feedback, and seek support from available staff members during the study. All students completed DISCOVER, SIGI, or the control condition within a 10 day period at which time the following instruments were completed: 1) The DISCOVER Progress Record, the SIGI Progress Record, or the CCIS Log; 2) the OAQ; and 3) for the DISCOVER and SIGI groups the MVS, and the ACDM-S. Three weeks later the CES and the OAQ were completed by all groups as a follow-up measure of treatment and control conditions. Students in this study also completed the Counselor Rating Form as part of a separate investigation described in a subsequent section of this technical report. Students also completed an instrument measuring user perceptions as part of another study that will be described in a future technical report.

Results

Before presenting results for the dependent measures, data are presented describing characteristics of the sample and treatment conditions. Results of the MVS for this sample, when compared to normative data provided by Holland, Daiger and Power (1980), revealed a comparable level of vocational identity and perception of barriers, but a significantly lower need for occupational information ($M=1.3$, $SD=1.3$ vs. $M=2.1$, $SD=1.5$ ($t(375)=5.0$, $p<.01$). A review of the DISCOVER and SIGI Progress Records for the sample revealed that students' use of DISCOVER averaged 110 minutes (SD=44) while SIGI use averaged 130 minutes (SD=41). The mean number of DISCOVER and SIGI appointments were 1.1 and 1.2 respectively. Neither of these differences between systems were statistically significant. The CCIS Log indicated that 64% of the students in the unstructured career center

control condition did engage in some career related activities while in the center. The log indicated that 23% of these students spent their time exclusively in career activities that included educational or occupational information seeking and browsing career magazines. Only 2% of the students talked with a career counselor while 64% of the students did make use of available career resources.

The following results are presented in two parts -- the univariate analyses performed on each measure and then the multivariate analyses performed to explore possible relationships among vocational behavior domains.

Univariate Analyses

Twenty-five univariate analyses examined possible differences among the three treatment conditions on the seven measures of vocational behavior. It should be noted that when performing a series of univariate analyses, the chance probability of obtaining significant results when none actually exists increases with the number of tests.

Means and standard deviations of data with interval measurements were obtained and analyzed with one-way ANOVA's. (Copies of complete statistical tables may be obtained from the first author). Most analyses were performed on multiple-item scales or on the total score derived from an instrument. Of the 22 ANOVA's conducted, none were significant at the .05 level. Three 3x4 chi-square analyses (Group x OAQ category) were conducted on data from each OAQ administration (i.e., before the treatment, immediately after the treatment, and 3 week follow-up). These analyses failed to reveal significant differences between the groups.

Multivariate Analyses

A series of multivariate analyses were performed to explore possible relationships among the variables. First, data from the 16 CES scales were analyzed with a one-way MANOVA using Treatment Group as a main effect. This analysis revealed a nonsignificant main effect for Treatment Group, Wilk's Lambda =.73, ($F(32,182) = 1.0$, $p=.47$).

A second one-way MANOVA, which used Treatment Group as a main effect, was performed using the following measures: ACDM-S Realistic Score, ACDM-S Intuitive Score, ACDM-S Dependent Score, and MVS Vocational Identity Score. The results indicated no differences between the 3 groups, Wilk's Lambda =.34, ($F(8,206) = 1.13$. $p=.34$.

Discussion

This study assessed the impact of computer-assisted and traditional career guidance services on (1) the certainty of occupational choice, (2) vocational identity, (3) career exploration behavior, and (4) decision making style. The study

was designed to correct for the seven previously noted limitations of research on computer-assisted career guidance. Both univariate and multivariate analyses failed to reveal differences across the three treatment conditions on the seven measures of vocational behavior. Several comments can be made about these findings.

First, and most obviously, the modified "stand-alone" use of computer-assisted career guidance systems employed in this study appeared to have no more measurable impact on vocational behavior than unstructured use of a career resource center. It should be noted that the career center used in this research was large and apparently elicited some career exploration among the control students; nevertheless, the lack of support for the computer applications is noteworthy. Data obtained on students' use of DISCOVER and SIGI indicated that many students completed their assigned system in one session and in minimal time. In contrast to these results, Sampson, Shahnasarian and Reardon (1985) reported estimates of mean times on systems to be 152 minutes (SD=70) and number of appointments to be 2.4 in a national study of DISCOVER and SIGI use. It appears that, given the opportunity for self-directed use of CACG systems, students in this study made minimal use of DISCOVER and SIGI.

In view of the efficacy of CACG systems to promote effective career decision making within a counseling context, demonstrated in comparative studies of DISCOVER and SIGI conducted by Kapes, Borman, Garcia, and Compton (1985), Kapes, Borman, and Kimberly (1985), Splete (1984), Splete, Elliott, and Borders (1985) as well as investigations of individual CACG systems as summarized by Cairo (1983), Clyde (1979), Harris (1974), McKinlay and McKeever (1980), and Parish, Rosenberg, and Wilkinson (1979), it would appear that the modified "stand alone" approach used in this study did not provide the enriched counseling context necessary for effective use of this technology. These results do not appear to support systems developer's recommendations for effective use of DISCOVER and SIGI on a "stand-alone" or modified "stand-alone" basis. Practitioners should note that the potential reductions in personnel costs with "stand-alone" applications may also reduce the impact of CACG interventions. Additional research on the optimum level of counselor involvement in CACG interventions seems warranted.

Second, this study revealed no relationship between student characteristics, such as gender, major, race, prior CACG experience, and so forth, and the impact of DISCOVER, SIGI, and a control treatment condition. Moreover, various facets of career exploratory behavior, level of certainty of occupational choice, decision making style, and vocational identity were also unrelated to treatment outcomes. Additional research examining these variables in situations where CACG systems are used in conjunction with various types of counselor intervention is suggested.

Third, the attitude and disposition of students toward this study merits attention. The sample consisted of 109 students, mostly freshmen, who volunteered to participate in this research to fulfill an introductory psychology course requirement. My Vocational Situation scores suggest that the sample, in reference to national norms, had adequate vocational identity, little need for occupational information, and few perceived barriers to vocational choice. Although students were encouraged to use the systems, the career center staff, and career center resources as much and as frequently as needed, most students completed CACG system use in one session and in minimal time. Thus, it appears that while the students in this study wanted to participate in a career guidance program evaluation, their perceived career guidance needs were neither pressing nor urgent, nor were they willing to invest extra time in the treatment conditions during the period of the study. Caution is needed in using such a sample under similar conditions in future research.

Perhaps the use of a normative approach to research on the outcomes of vocational interventions is not sufficiently sensitive to assess changes in client responses to CACG systems. Cochran (1977, 1983) has suggested the use of the personal constructs of deciders rather than externally supplied constructs in measuring the outcomes of vocational interventions, especially computer applications.

In summary, these results raise several questions about the impact of computer assisted career guidance systems, especially on a "stand-alone" basis or with minimal counselor assistance. Further, CACG systems may have limited utility for general college populations who do not have felt career needs or concerns, such as students attending freshman orientation sessions. Further research clarifying these issues is warranted.

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Table 1

Group and Aggregate Demographic Characteristics of the Sample

Variable	Group			
	Control (n=39)	SIGI (n=33)	DISCOVER (n=37)	TOTAL (n=109)
Age				
M	18.7	18.6	19.0	18.8
SD	4.4	1.3	2.5	3.1
Sex				
Male	26.6%	33.3%	35.1%	31.2%
Female	74.4%	66.7%	64.9%	68.8%
Race				
Black	10.3%	3.0%	8.1%	7.3%
Hispanic	0%	3.0%	0%	.9%
Asian American	0%	3.0%	5.4%	2.8%
Native American	12.8%	6.1%	13.5%	11.0%
Anglo/White	71.8%	78.8%	70.3%	73.4%
Other	5.1%	3.0%	2.7%	3.7%
No Response	0%	3.0%	0%	.9%
Year in School				
Freshman	79.5%	66.7%	73.8%	73.4%
Sophomore	20.5%	24.2%	10.8%	18.3%
Junior	0%	6.1%	8.1%	4.6%
Senior	0%	3.0%	8.1%	3.7%
Prior Individual Career Counseling				
Yes	33.3%	21.2%	32.4%	29.4%
No	64.1%	78.8%	67.6%	69.7%
No Response	2.6%	0%	0%	.9%
Prior Group Career Counseling				
Yes	38.5%	9.1%	35.1%	28.4%
No	59.0%	90.9%	64.9%	70.6%
No Response	2.6%	0%	0%	.9%

(table continues)

Variable	Control (N=39)	SIGI (N=33)	DISCOVER (N=37)	Total (N=109)
		Group		
Prior Career Assessment				
Yes	30.8%	15.2%	37.8%	28.4%
No	66.7%	84.8%	62.2%	70.6%
No Response	2.6%	0%	0%	.9%
Prior Career Course				
Yes	7.7%	3.0%	8.1%	6.4%
No	89.7%	97.0%	91.9%	92.7%
No Response	2.6%	0%	0%	.9%
Prior Use of Career Workbook				
Yes	5.1%	15.2%	16.2%	11.9%
No	92.3%	84.8%	83.8%	87.2%
No Response	2.6%	0%	0%	.9%
Prior Career Workshop				
Yes	10.3%	9.1%	5.4%	8.3%
No	87.2%	90.9%	94.6%	90.8%
No Response	2.6%	0%	0%	.9%
Prior CACG Experience				
Yes	17.9%	12.1%	16.2%	15.6%
No	79.5%	87.9%	83.8%	83.5%
No Response	2.6%	0%	0%	.9%

The Impact of Two Computer-Assisted Career Guidance Systems on College Student's Perceptions of the Counseling Dimensions of Computer Interaction1

by

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Janet G. Lenz
Gary W. Peterson
Michael Shahnasarian
Rebecca E. Ryan-Jones

February, 1987

Abstract

A study was conducted to examine the social influence of two computer-assisted career guidance systems on 109 college students. User perceptions of expertness, attractiveness, and trustworthiness, as measured by a modified version of the Counselor Rating Form, were compared between users of DISCOVER and SIGI and a control group of nonusers. Findings showed that DISCOVER and SIGI users had more positive perceptions of the attractiveness of systems than nonusers, indicating one effect of system use. It was also found that users attributed high levels of expertness, attractiveness, and trustworthiness to the computer systems, sometimes exceeding levels attributed to effective counselors. A discussion of the implications of these findings for future use and research of computer-assisted career guidance systems is presented.

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1. A version of this paper was presented at the Annual Conference of the British Psychological Society, University of Sussex, April, 1987.

Background

Since the advent of computer-assisted career guidance (CACG) systems twenty years ago, questions have been raised periodically about computers replacing counselors. Evidence increasingly accumulates that this is not happening or warranted (Harris-Bowlsbey, 1983; 1985). National studies show that most institutions use CACG systems within a counseling context (Sampson, Shahnasarian, & Reardon, 1985; 1986). Other studies show the most beneficial impact of CACG systems is in conjunction with counseling (Garis, 1982; Kapes, Borman, & Kimberly, 1985; Marin, 1984; Rozman & Kahl, 1984; Sampson & Stripling, 1979).

While these studies provide general support for including counselor intervention as part of CACG system use, relatively little is known about how client perceptions and expectations relate to CACG system effectiveness. Given a more complete understanding of client perceptions and expectations, counselor behavior can be more explicitly stated and defined. Data on client perceptions can also be used by system developers to include information within CACG systems that is designed to help correct common misconceptions that contribute to misuse or to reinforce appropriate perceptions that contribute to effective career decision making.

Theory and research pertaining to the relationship between counselor influence and consequent client behavior change provides a useful framework for investigating the impact of CACG systems on career decision making. Strong (1968) and Strong and Matross (1973) suggest that the counselor's social power in the counseling relationship is a major factor in facilitating client behavior change. The social power of the counselor is increased when the client perceives the counselor's attributes to be congruent with his or her needs. Three important dimensions of social power include expertness, attractiveness, and trustworthiness. Counselors who are perceived by clients as being expert, attractive, and trustworthy enhance the likelihood of positive client behavior change (Barak & LaCross, 1975; Schmidt & Strong, 1971; Strong, 1968; Strong & Schmidt, 1970).

Purpose of the Study

This study examined the social influence of CACG systems as an agent of behavior change. In particular, this study examined the social power that college students project on either DISCOVER or SIGI, two popular CACG systems. Research questions addressed in this study included: How is social influence attributed to a CACG system altered as a result of interacting with the computer? Do any differences exist in the way college students perceive their experience of using DISCOVER or SIGI? How do college students perceive the social influence of DISCOVER or SIGI in terms of the constructs of expertness, attractiveness, and trustworthiness? How does the social influence of DISCOVER or

SIGI compare with the social influence of selected counselor interventions?

Methodology

Sample

One hundred and nine students from an introductory undergraduate psychology class in a large southeastern university were involved in this study. Partial course credit was granted to students who participated. A summary of student demographic data for each treatment condition is presented in Table 1. The mean age of students was 18.8 years (SD=3.1) with 69% being female and 73% white, 11% Native American, 7% black, 7% other. Seventy-three percent of the students were freshman and 23% were sophomores. The three most popular declared majors were business (32%), nursing (8%), and psychology (8%), while 10% were undecided majors. In terms of prior experience with career services, 29% of the students had received individual counseling, 6% had completed a career course, and 16% had completed some type of CACG system other than DISCOVER or SIGI. An assumption was made that the sample represented students typically served in a college career resource center.

Computer-Assisted Career Guidance Systems

DISCOVER and SIGI seek to provide career decision making assistance similar to that historically provided by career counselors. Maze and Cummings (1982) state that DISCOVER is designed to increase decision-making skills, vocational maturity, specification of career plans, offer information about occupations and educational institutions, and increase the user's self-knowledge concerning interests, abilities, and values. The four modules of DISCOVER include: 1) self-assessment, 2) structured search of occupational alternatives, 3) presentation of occupational information, and 4) structured search of educational alternatives and presentation of educational information. Katz (1973, 1980) describes SIGI as helping students to examine their values, identify and explore options, receive and interpret relevant occupational data, and master strategies for making informed and rational career decisions. The five SIGI subsystems include: 1) VALUES, 2) LOCATE, 3) COMPARE, 4) PLANNIN COMPARE, 4) PLANNING, and 5) STRATEGY.

Instrumentation

A modified version of the Counselor Rating Form (Barak & LaCross, 1975) was used in this study. The only modifications involved renaming the instrument the Computer Rating Form (CRF) and asking students to respond in terms of their perceptions of what it was like to use DISCOVER or SIGI (as in the case of the two treatment groups) or their perceptions as to what it would be like to use a CACG system (as in the case of the control group). Other instructions and the 36 seven-point bipolar dimensions in the Computer Rating Form were identical to the original Counselor Rating Form. Each of the three scales of the CRF (expertness, attractiveness, and trustworthiness) includes 12 items and yields

a score ranging from 12 to 84. Split-half reliability coefficients reported for the CRF were .87 for expertness, .85 for attractiveness, and .91 for trustworthiness (LaCrosse & Barak, 1976). The CRF has been demonstrated to be a valid instrument for assessing perceptions of counselor behavior from multiple sources (Barak & LaCrosse, 1977).

The DISCOVER Progress Record and the SIGI Progress Record (Reardon, 1984a) (Appendices A & B) were constructed to verify the extent to which DISCOVER and SIGI were actually used by students in the study. An instrument for collecting demographic data and information related to students' prior experience with career counseling services, including computer applications, was also developed (Reardon, 1984b) (see Appendix D).

Procedures

One hundred and nine students were randomly assigned to a DISCOVER group (n=37), a SIGI group (n=33), and a control group (n=39). The study was completed at a university career resource center. Students in the DISCOVER and SIGI groups were encouraged to use supplemental audio-visual and print-based career information materials in the career resource center as part of the treatment. CACG system use was completed with minimum counselor assistance in the form of: 1) a brief group introduction to system use; 2) occasional monitoring of student progress; and 3) providing counselor assistance when requested by students. Students using DISCOVER were requested to complete the first three modules of the system, while students using SIGI were requested to complete all five subsystems. Students in the control group were asked to make unstructured use of the audio-visual and print-based career information materials in the career resource center for a period of three hours. Students in all three groups were asked not to use other available CACG systems until after all data collection was complete.

All students attended a group specific orientation meeting (see Appendix E) where: 1) an overview of the study was provided; 2) a research participation release form (see Appendix F) and a demographic questionnaire were completed (the control group also completed the CRF prior to using career information materials); 3) an introduction to the purpose, operation, and procedures associated with DISCOVER, SIGI, or the control condition was provided; 4) an explanation of data collection procedures was presented; 5) initial appointments were scheduled for DISCOVER or SIGI, and 6) a tour of the career resource center, including the location of relevant resources, was completed. All three groups were encouraged to ask questions, obtain feedback, and seek support from available staff members during the time they were in the career resource center using DISCOVER, SIGI, or used print-based materials. All students completed DISCOVER, SIGI, or the use of print-based materials within a 10 day period at which time the following instruments were completed: 1) DISCOVER Progress Record, the SIGI Progress Record, or the CCIS Log, and 2) for the DISCOVER and SIGI groups the CRF. A review of the DISCOVER and SIGI Progress Records for the sample

revealed that students used DISCOVER an average of 110 minutes (SD=44) and SIGI 130 minutes (SD=41). The mean number of DISCOVER and SIGI appointments were 1.1 and 1.2 respectively. Neither of these differences between systems were statistically significant. Students in this study also completed four instruments measuring various aspects of vocational behavior and one instrument measuring user perceptions of the career decision making process, as part of separate investigations.

Results

A multivariate (MANOVA) analysis was performed to examine possible differences among the two treatment conditions and the control condition on three measures of computer attributes. Means and standard deviations for the CRF expertness scale, attractiveness scale, and trustworthiness scale for the DISCOVER group, SIGI group, and the control group are presented in Table 2. Hotellings' multivariate test of the hypothesis leads to the rejection of the null hypothesis that there are no differences in perception of the computer among the three groups. Subsequent univariate F tests, also shown in Table 2, revealed significant differences between groups on the CRF attractiveness scale. Fishers multiple comparison test (LSD = 4.88, $p < .05$) revealed that significant differences existed between the DISCOVER group and the control group and the SIGI group and the control group.

In an effort to examine how student perceptions of using DISCOVER or SIGI compared with typical client perceptions of counselors, 64 studies using the Counselor Rating Form were reviewed to identify appropriate sources of comparison data. In order to be included in the comparison, it was necessary that: 1) means and standard deviations be reported for expertness, attractiveness, and trustworthiness; 2) the total instrument was used as opposed to shortened or modified versions; 3) the original instrument title was used as opposed to a modified title such as Supervisor Rating Form; and 4) students provided their own ratings of an intervention, namely counselor, videotape, or counseling transcript, as opposed to responding how they perceived someone else would rate the counselor, videotape, or counseling transcript. In situations where several treatment conditions were used in one research design, e.g. variations in nonverbal behavior, attire, and gender, scores for each scale were averaged across all treatment conditions. Analysis of the 64 CRF studies provided 16 studies meeting these 4 criteria. Means and standard deviations for the 16 studies are presented in Table 3. The grand means for these studies are as follows: expertness = 61.15, attractiveness = 59.75, and trustworthiness = 63.90. In comparison the means for DISCOVER and SIGI respectively were expertness = 69.5 and 72.2, attractiveness = 61.5 and 60.8, and trustworthiness = 68.8 and 67.6.

Discussion

This study sought to investigate the social influence of CACG systems as a resource for career decision making. Students using DISCOVER and SIGI, in comparison to students not using a CACG system, had more positive perceptions of both systems in terms of attractiveness. Within Strong's (1968) conceptualization of interpersonal influence in counseling, students using DISCOVER and SIGI attributed an increased sense of liking, compatibility, and similarity to these CACG systems. This effect may well have evolved as a result of the climate of acceptance and understanding communicated via the text of screen displays, the user friendliness of the systems, and the ability of the students to control the operation of the systems. In terms of expertness and trustworthiness, the experience of using DISCOVER and SIGI did not significantly affect the student's perceptions of social influence, implying that their experience with the systems confirmed their previous beliefs. The finding that some change in perceptions occurred is congruent with previous research by Stirtz (1972) who found that counselor trainee's attitudes toward computer use became more positive after actual use of a computer-assisted counseling system.

It also appears that students in this study attributed social power, that is expertness, attractiveness, and trustworthiness, to DISCOVER and SIGI. These dimensions, which have been viewed as attributes of effective counselors, were perceived as characteristic of these computer applications as well. This is especially interesting given that computer applications have been traditionally viewed by some members of the public and some counselors as impersonal and mechanistic. A comparison of the scores for expertness, attractiveness, and trustworthiness for the DISCOVER and SIGI groups with the corresponding scores for the 16 studies presented in Table 3, reveals that the CACG systems and the counselors received similar scores. Indeed, for expertness and trustworthiness, the CACG systems on the average received higher scores. In spite of the fact that the studies included in Table 3 manipulated a wide variety of variables, these studies do provide information about client perceptions of counselors, and as such provide a reasonable basis for comparison. Based on these preliminary data, one can conclude that students in this study attributed characteristics to DISCOVER and SIGI that have been generally thought of as effective counselor qualities.

Evidence that users perceived these systems as being expert, attractive, and trustworthy, may in fact be one of the causal factors for the general effectiveness of CACG systems reported in the literature. In terms of expertness, again using Strong's (1968) conceptualization of interpersonal influence in counseling as a frame of reference, students perceived DISCOVER and SIGI as rational and knowledgeable. This effect may exist as a function of the reputation of systems among students, the amount of structure inherent in system functioning, the extensive amount of

career information available, and text in DISCOVER and SIGI describing the quality and diversity of information sources.

In terms of trustworthiness, students perceived DISCOVER and SIGI as being objective and open, with the system having nothing to gain by being manipulative. The trustworthiness of DISCOVER and SIGI may exist as a function of text in DISCOVER and SIGI describing procedures for ensuring confidentiality of client responses as well as counselor intervention strategies used as part of this study that described how confidentiality would be maintained. The finding that students perceived the systems to be trustworthy, is congruent with previous research. In a study that compared computer-assisted and traditional clinical interviews, Lucas, Mullin, Luna and McInroy (1977) found that computer-assisted interviews, in comparison with human interviewers, elicited more honest responses from the clients being interviewed.

Implications

The finding that students attribute relatively positive social power characteristics to DISCOVER and SIGI has several implications. Positive perceptions of CACG systems can lead to positive expectations for career decision making assistance, which in turn can help clients to make more complete use of CACG system capabilities resulting in more informed and rational career choices. It is also quite possible, however, for clients to view a CACG system as being "the expert" and to shift the locus of responsibility for decision making from themselves to the computer. Elwork and Gutkin (1985) and Lister (1970) have stated that individuals tend to perceive computer applications as inherently valid. It would follow then that a clear delineation of the role of the client, the counselor, and the CACG system should be an important element of initial counselor intervention strategies. Hopefully, this approach will lead to more realistic expectations, thereby increasing the likelihood that client exploratory behavior will be reinforced. Also, the quality of career decision making can improve as clients are encouraged to assume greater personal responsibility for their choices.

Additional research is needed to further explore the nature of client perceptions of the experience of using a CACG system. Specifically, how do various CACG system features, e.g. the text of screen displays, user friendliness, and ability to control system operation, influence client perceptions of CACG systems? What effect do various counselor intervention strategies have on client perceptions of CACG systems? What relationships exist, if any, between client perceptions of CACG systems and various client characteristics, e.g. demographic variables, vocational identity, occupational certainty, and decision making style? What differences exist, if any, between client perceptions of CACG systems and client perceptions of other types of computer applications in counseling related to testing, interviewing, personal problem solving, and instruction? Direct comparisons of client perceptions of CACG

systems and counselors in controlled studies would also be of interest. As more is learned about how clients view CACG systems, the dimensions of power and influence they project on them, the impact of this technological resource can be better understood. This, in turn, can hopefully result in improved counselor intervention strategies and improved system designs.

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Table 1

Group and Aggregate Demographic Characteristics of the Sample

Variable	Group			
	Control (n=39)	SIGI (n=33)	DISCOVER (n=37)	TOTAL (n=109)
Age				
M	18.7	18.6	19.0	18.8
SD	4.4	1.3	2.5	3.1
Sex				
Male	26.6%	33.3%	35.1%	31.2%
Female	74.4%	66.7%	64.9%	68.8%
Race				
Black	10.3%	3.0%	8.1%	7.3%
Hispanic	0%	3.0%	0%	.9%
Asian American	0%	3.0%	5.4%	2.8%
Native American	12.8%	6.1%	13.5%	11.0%
Anglo/White	71.8%	78.8%	70.3%	73.4%
Other	5.1%	3.0%	2.7%	3.7%
No Response	0%	3.0%	0%	.9%
Year in School				
Freshman	79.5%	66.7%	73.8%	73.4%
Sophomore	20.5%	24.2%	10.8%	18.3%
Junior	0%	6.1%	8.1%	4.6%
Senior	0%	3.0%	8.1%	3.7%
Prior Individual Career Counseling				
Yes	33.3%	21.2%	32.4%	29.4%
No	64.1%	78.8%	67.6%	69.7%
No Response	2.6%	0%	0%	.9%
Prior Group Career Counseling				
Yes	38.5%	9.1%	35.1%	28.4%
No	59.0%	90.9%	64.9%	70.6%
No Response	2.6%	0%	0%	.9%

(table continues)

Variable	Control (N=39)	SIGI (N=33)	DISCOVER (N=37)	Total (N=109)
		Group		
Prior Career Assessment				
Yes	30.8%	15.2%	37.8%	28.4%
No	66.7%	84.8%	62.2%	70.6%
No Response	2.6%	0%	0%	.9%
Prior Career Course				
Yes	7.7%	3.0%	8.1%	6.4%
No	89.7%	97.0%	91.9%	92.7%
No Response	2.6%	0%	0%	.9%
Prior Use of Career Workbook				
Yes	5.1%	15.2%	16.2%	11.9%
No	92.3%	84.8%	83.8%	87.2%
No Response	2.6%	0%	0%	.9%
Prior Career Workshop				
Yes	10.3%	9.1%	5.4%	8.3%
No	87.2%	90.9%	94.6%	90.8%
No Response	2.6%	0%	0%	.9%
Prior CACG Experience				
Yes	17.9%	12.1%	16.2%	15.6%
No	79.5%	87.9%	83.8%	83.5%
No Response	2.6%	0%	0%	.9%

Table 2

Means, Standard Deviations, Hotellings Multivariate F Test, and univariate F Tests for Expertness, Attractiveness, and Trustworthiness

Measure	Group: Control (N=39)	SIGI (N=33)	DISCOVER (N=35)[b]	F(6,202)[a] 4.489*
CRF-Expertness Scale	M=66.8 SD=9.7	M=72.2 SD=8.1	M=69.5 SD=11.3	F(2,104)= 2.65
CRF-Attractiveness Scale	M=53.1 SD=9.3	M=63.1 SD=11.6	M=62.2 SD=10.1	F(2,104)= 10.66*
CRF-Trustworthiness Scale	M=65.0 SD=7.0	M=67.9 SD=9.5	M=69.3 SD=10.5	F(2,104)= 2.17

[a] Hotellings Multivariate F(6,202)=4.49, p.=.00027

[b] Two cases in the DISCOVER group contained missing CRF data and were eliminated from the analysis.

* $p < .05$

Table 3

Counselor Rating Form Comparison Data

Study	Expert-ness		Attractive-ness		Trustworthi-ness	
	M	SD	M	SD	M	SD
Atkinson & Wampold (1982)	51.80	15.61	55.28	12.08	61.80	12.90
Banikiotes & Marluzzi (1981)	60.30	9.35	63.82	9.09	64.15	8.93
Barak & Dell (1977)	62.17	11.06	57.76	10.55	64.54	9.71
Claiborn (1979)	52.23	13.60	49.33	10.88	54.60	11.40
Ehrlich, D'Augelli & Danish (1979)	61.61	13.26	62.58	12.12	66.14	12.13
Hackman & Claiborn (1982)	61.25	12.39	53.16	12.96	62.10	11.79
LaCrosse (1977)	75.30	8.19	74.35	10.57	77.82	9.53
LaCrosse (1980)	72.63	8.22	73.78	7.05	74.25	7.13
Lee, Sutton, France & Uhlemann (1983)	48.47	10.75	46.31	9.97	52.29	8.65
Lewis & Walsh (1980)	65.21	11.03	70.64	11.01	69.90	10.48
Pomales, Claiborn, & LaFromboise ((1986)	44.15	6.13	46.38	7.53	47.75	3.68
Remer, Roffey & Buckholtz (1983)	63.15	10.64	61.67	10.46	63.11	12.58
Robbins & Haase (1985)	56.43	14.80	52.72	12.14	56.71	12.91
Ruppel & Kaul (1982)	68.13	9.38	62.93	11.19	69.63	9.73
Suiter & Goodyear (1985)	64.71	12.86	61.63	12.11	65.93	13.09
Zamostny, Corrigan & Eggert (1981)	70.95	8.75	63.64	9.67	71.73	8.78

Appendx A

NAME: _____
(print)

DISCOVER PROGRESS RECORD

Directions: Curricular Career Information Service (CCIS) is seeking to evaluate the quality of many of its programs and services in order to improve them. You can help in two ways: (1) complete at least some work in Sections 1*, 2*, and 3* of DISCOVER, and (2) complete the evaluation forms provided. This set of instruments will help us evaluate DISCOVER. Thank you for your help.

Appointment Date:	Time On DISCOVER	Check Section Used:
(1) ___/___/___	___hr. ___min.	* ___1. Learning about yourself
(2) ___/___/___	___hr. ___min.	___a. Insterests
(3) ___/___/___	___hr. ___min.	___b. Abilities
		___c. Values
		* ___2. Searching for occupations
		* ___3. Learning about occupations
		___a. Browsing
		___b. Detail questions
		___4. Searching for educational institutions

Note: If you have completed your use of DISCOVER and do not plan to make another appointment to use DISCOVER, please turn this page and complete the remainder of these evaluation forms.

Appendix B

NAME: _____
(print)

SIGI PROGRESS RECORD

Directions: Curricular Career Information Service (CCIS) is seeking to evaluate the quality of many of its programs and services in order to improve them. You can help in two ways: (1) complete at least some work in Sections 1 through 5 of SIGI, and (2) complete the evaluation forms provided. This set of instruments will help us evaluate SIGI. Thank you for your help.

Appointment Date:	Time On SIGI	Check Section Used:
(1) __/___/___	___hr. ___min.	___1. VALUES
(2) ___/___/___	___hr. ___min.	___2. LOCATE
(3) ___/___/___	___hr. ___min.	___3. COMPARE
		___4. PLANNING
		___5. STRATEGY

Note: If you have completed your use of SIGI and do not plan to make another appointment to use SIGI please turn this page and complete the remainder of these evaluation forms.

Appendix C

CCIS LOG

Directions: During your three hours in CCIS, indicate the name of the activity and the time spent on that activity. You may do anything you wish.

Time	Activity

Return form to the receptionist at the front desk. Thank you!

Appendix D

COMPUTER-ASSISTED CAREER GUIDANCE QUESTIONNAIRE

Curricular-Career Information Service

Florida State University

Name _____ Date _____

Mailing Address_____Zip_____Phone_____

Course Prefix_____Course Number_____Section Number_____

CHOOSE A RESPONSE AND PLACE THE NUMBER IN THE SPACE IN THE RIGHT MARGIN

1. Major .....(See next page)..... 1. _____

2. Age ..... 2. _____

3. Sex ..... 3. _____
   1. Male 2. Female

4. Ethnic Group ..... 4. _____
   1. Black
   2. Spanish Surnamed
   3. Asian American
   4. Native American
   5. Anglo/White
   6. Other _____
   7. Prefer not to respond

5. Year in School ..... 5. _____
   1. Freshman
   2. Sophomore
   3. Junior
   4. Senior
   5. Graduate Student
   6. Adult not presently enrolled at FSU

Items 6-12 refer to prior experience with career counseling services

1. Yes 2. No

6. Individual career counseling ..... 6. _____

7. Group career counseling ..... 7. _____

8. Interest/ability/personality assessment ..... 8. _____

9. Career Course ..... 9. _____

10. Self study career workbook ..... 10. _____

11. Career Workshop ..... 11. _____

12. Computer-Assisted Career Guidance System ..... 12. _____

If yes, what system _____

& SCIENCES
Anthropology
Biological Science
Chemistry
Classical Language & Literature
Computer Science
Comparative & World Lit.
English
Geology
Geophysical Fluid Dyn
History
Mathematics
Medical Technology
Meteorology
Modern Languages
Molecular Biophysics
Oceanography
Philosophy
Physics
Psycology
Religion
Statistics

NESS
Business

UNICATION
Audiology & Speech Pathology
Communications

INOLOGY
Criminology

ATION
Adult Education
Comprehensive Voc. Ed.
Counseling & Human Systems
Early Childhood Ed.
Educational Adm.

Ed. Psychology
Educational Research & Testing

EDUCATION(cont)
131 Elementary Education
132 Emotional Dist./Learning Disabilities
133 English Education
134 Evaluation & Measurement
135 Foundations of Education
136 Health Education
137 Higher Education
138 Instructional Systems
139 Leisure Services & Studies
140 Mathematics Education
141 Media Education
142 Mental Retardation
143 Movement Science Education
144 Multilingual/Multicultural Education
145 Physical Education
146 Reading Education
147 Rehabilitation Services
148 Science Education
149 Social Studies Education
150 Special Education
151 Visual Disabilities

ENGINEERING
152 Engineering

HOME ECONOMICS
153 Clothing & Textiles
154 Home & Family Life
155 Home Economics
156 Home Economics Education
157 Marriage & Family
158 Nutrition & Food Science

INTERDISCIPLINARY
159 American Studies
160 Asian Studies, East
161 Humanities
162 Inter-American Studies
163 International Affairs
164 Junior College Instr.
165 Marriage & Family Liv.
166 Physics Inter. Program
167 Slavic & East Eur. Stud.
168 Social Sciences

LAW

LIBRARY & INFO STUDIES
170 Library Science

MUSIC
171 Music

NURSING
172 Nursing

SOCIAL SCIENCES
173 Economics
174 Geography
175 Political Science
176 Public Administration
177 Sociology
178 Urban & Reg. Planning
179 Cert. in Public Adm.

SOCIAL WORK
180 Social Work

THEATRE
181 Theatre

VISUAL ARTS
182 Art
183 Art Education
184 Art History
185 Dance
186 Interior Design

Initial Meeting -- SIGI or DISCOVER

1. Participant role check and verification, course section #

2. Introduce self, research study, and state purpose

3. Complete pretest instruments

   a. Release Form
   b. Computer-Assisted Career Guidance Questionnaire (CACG) [course section #]
   c. Occupation Alternatives Question (OAQ)

4. Introduce SIGI or DISCOVER

   a. Use available charts to give overview and purpose
   b. Confidential
   c. May use more than once and as long as desired
   d. Printed materials available
   e. May use other CCIS resources
   f. Complete your work on SIGI or DISCOVER as soon as possible
   g. Calm fears about breaking the machine
   h. Do not use the other system (SIGI or DISCOVER) for 3 weeks

5. Explain data collection procedures

   a. Progress record form and other instruments (30-40 minutes)
   b. Note participant folders in bin in computer room

6. Give data, time, place of 3 week follow-up meeting

   a. Data collection instruments
   b. Project debriefing

7. Schedule initial appointments for SIGI or DISCOVER

8. Tour CCIS and computer room

Initial Meeting -- CCIS Group

1. Participant role check and verification

2. Introduce self, research study, and state purpose

3. Complete pretest instruments

   a. Release Form
   b. Computer-Assisted Career Guidance Questionnaire (CACG)
   c. Occupation Alternatives Question
   d. My Vocational Situation
   e. Assessment of Career-Decisionmaking
   f. Computer Rating Form

4. Introduce CCIS Assignment

   a. Spend three hours in the Center
   b. Use any CCIS resources you want except those in the computer room 217 during the next 3 weeks
   c. Review CCIS brochure in some detail
   d. You may do anything you want while in CCIS

5. Explain data collection procedures

   a. CCIS log (3 hours): activity and time spent
   b. Give logs to receptionist at front desk

6. Give date, time, place of 3 week follow-up meeting

   a. Data collection instruments
   b. Project debriefing

7. Brief tour CCIS

Appendix F

RESEARCH PARTICIPATION RELEASE FORM

I give Dr. Robert Reardon and Dr. James Sampson of Florida State University, permission to examine my responses on various questionnaires and research instruments related to an evaluation of the DISCOVER and/or SIGI computer-assisted career guidance systems. I understand that at no time will the responses on any questionnaire or research instrument be identified by name in any research report. I further understand that I can have access to my questionnaires and research instruments at any time.

NAME (please print) _____

SIGNATURE _____ DATE _____