DOCUMENT RESUME

ED 334 484 CG 023 499

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TITLE A Comparison of the Effectiveness of Three Computer-Assisted Career Guidance Systems on College Students' Career Decision Making Processes: Technical Report No. 6.
INSTITUTION Florida State Univ., Tallahassee. Center for the Study of Technology in Counseling and Career Development.
SPONS AGENCY Kellogg Foundation, Battle Creek, Mich.
PUB DATE Dec 87
NOTE 40p.; For related reports, see CG 023 498-501.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Career Counseling; *Career Guidance; Career Information Systems; College Students; *Computer Assisted Instruction; Counseling Effectiveness; Counseling Techniques; Higher Education
IDENTIFIERS Computer Assisted Career Guidance; *DISCOVER System; *System of Interactive Guidance and Information

ABSTRACT

The Computer-Assisted Career Guidance (CACG) Evaluation Form was developed to evaluate the effectiveness of CACG systems in performing three vital functions in career decision-making. This instrument was subsequently used to compare the effectiveness of DISCOVER, System of Interactive Guidance and Information (SIGI), and SIGI PLUS using 132 subjects from two cohort groups of students in an introductory psychology course. After finishing their assigned system, subjects completed the Computer-Assisted Career Guidance Evaluation Form, My Vocational Situation, and the Occupational Alternatives Question. Results showed that all three CACG systems were rated positively. However, subjects who expressed a need for career information rated all three CACG systems significantly more effective in developing and evaluating career options than those subjects who perceived no need for information. Further, subjects who were undecided about their career direction found SIGI PLUS significantly more helpful for obtaining self-knowledge and occupational knowledge, and more rewarding and enjoyable. The results suggest that perceived effectiveness of CACG systems may be related to the state of client career decidedness and their need for career information. The evaluation instruments and 44 references are included. (Author/LLL)

A Comparison of the Effectiveness of Three Computer-Assisted Career Guidance Systems on College Students' Career Decision Making Processes: Technical Report No. 6

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December, 1987

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Abstract

The Computer-Assisted Career Guidance Evaluation Form, was developed to evaluate the effectiveness of CACG systems in performing three vital functions in career decision-making. This instrument was subsequently used to compare the effectiveness of DISCOVER, SIGI, and SIGI PLUS using 132 subjects from two cohort groups of students in an introductory psychology course. After finishing their assigned system, subjects completed the Computer-Assisted Career Guidance Evaluation Form, My Vocational Situation (MVS) by Holland, Daiger, & Power (1980a), and the Occupational Alternatives Question (OAQ) (Zener & Schnuelle, 1972). Results of the analysis of the data showed that all three CACG systems were rated positively. However, subjects who expressed a need for career information rated all three CACG systems significantly more effective ($p < .001$) in developing and evaluating career options than those subjects who perceived no need for information. Further, subjects who were "undecided" about their career direction found SIGI PLUS significantly more helpful for obtaining self knowledge and occupational knowledge ($p < .05$), and more rewarding and enjoyable ($p < .03$). The results suggested that perceived effectiveness of CACG systems may be related to the state of client career decidedness (OAQ) and their need for career information (MVS).

Background

User perceptions of the effectiveness of computer-assisted career guidance (CACG) systems are among the most common outcome criteria. While Cairo (1983) and Clyde (1979) have addressed the limitations of these criteria, Spokane and Oliver (1983) have criticized the excessive use of self-report measures that lack validity and reliability. Nevertheless, user perceptions remain an important outcome variable in CACG research for two reasons; first, such measures may be tailored to match system goals and objectives; and second, items may be included in the instruments to address specific human factors unique to different systems.

As the use of CACG systems has grown, so has the need for investigations of the impact of these systems on users. In this regard, Cairo (1983) and Parish, Rosenberg, and Wilkinson (1979) have stressed the need to compare the impact these CACG systems have on users, particularly in light of the diversity of theoretical foundations underlying the development of CACG systems, the ways this technology may be incorporated into local career guidance service delivery, and in light of the individual characteristics of users.

In addition to ascertaining the impact of the CACG systems in general, it is also important to realize that the systems may do different things for different users. Fretz (1981) suggested that career decidedness was a potentially important client attribute for inclusion in vocational intervention studies. More recently, Fretz and Leong (1982) hypothesized that career decidedness would be "a most logical source of client differences that might predict outcomes of career treatment..." (p. 388). Slaney (1980) suggested that the Occupational Alternatives Question (OAQ; Zener & Schnuelle, 1972), a measure of expressed vocational interests, could be used as a brief and easily administered measure of career indecision and that subjects with different OAQ scores might respond differently to career interventions. Slaney (1983) found a clear relationship between levels of career decidedness and responses to career interventions for undergraduate females. Another measure of career decidedness, My Vocational Situation (MVS) (Holland, Daiger, & Power, 1980a), has been used by researchers with generally positive results (Remer, O'Neill, & Gohs, 1984; Rayman, Bernard, Holland, & Barnett, 1983; Slaney, & Dickson, 1985).

Purpose of the Study

The present study sought to compare the effectiveness of three CACG systems, DISCOVER for Schools, SIGI, and SIGI PLUS, in terms of (1) their contribution to improved career decision-making and (2) the attitudes of users regarding the helpfulness of computer-assisted career guidance. The objectives of this report are:

(1) to present a valid and reliable self-report measure that can be used to compare the relative effectiveness of CACG systems;

(2) to use the measure to compare the effectiveness of three selected CACG systems in general; and

(3) to examine whether the effectiveness of CACG systems is related to entry characteristics of users, namely vocational identity and career decidedness.

Development of an Evaluation Instrument

An evaluation standard was established to serve as a criterion against which any career guidance system, regardless of its human and non-human characteristics, could be compared. The standard identifies component processes that a guidance system could make to enhance career decision-making. The work of Chapman (1975), Gelatt (1962), Harris-Bowlsbey (1983a; 1983b), Katz (1966; 1973), Katz and Shatkin (1983), Sampson, McMahon, and Burkhead (1985), and Super (1973), provided the conceptual basis for developing the following evaluation standard.

Goal: The goal of any system should be to assist individuals in developing career decision-making skills. This may be accomplished by helping individuals to:

a) develop their career decision-making skills;
b) clarify their values, interests, and abilities;
c) identify potentially satisfying occupations congruent with their values, interests, and abilities;
d) acquire an understanding of the world of work;
e) integrate their understanding of self, the world of work, and the needs of significant others so as to make an optimal occupational choice; and to
f) formulate a systematic plan of action to implement their occupational choice (Sampson & Peterson, 1984, p. 1).

These criteria served as heuristics for the development of a generic CACG Evaluation Instrument.

An item pool was developed by the authors to measure each of the six criteria described above as well as to measure general impressions and human factors (i.e., user friendliness). The initial instrument consisted of seven content scales, one for each objective and one for the computer effect. Following external reviews of items by a variety of career guidance professionals, including the developers of DISCOVER, SIGI and SIGI PLUS, and subsequent editing, a total of 64 items were retained for field testing. A five-point Likert-type rating scale was adopted where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Three parallel forms of the 64-item questionnaire were developed, one for each system (Peterson, Sampson, & Reardon, 1985).

Methodology

Subjects

Two cohort groups of students, one for each successive semester from an introductory psychology course, were combined to render a pool of 132 subjects. The subjects in the first cohort were randomly assigned to DISCOVER (n=37) and SIGI (n=31), while subjects in the second cohort were randomly assigned to SIGI (n=33) and SIGI PLUS (n=33). Thus, when combined, the DISCOVER group consisted of 37 subjects; SIGI, 64 subjects; and SIGI PLUS, 33 subjects. There were no significant differences among the three groups according to age, race, sex, year in school, vocational identity (MVS scores) and career decidedness (OAQ scores). Therefore, even though the groups were not randomly drawn from a single population, it was concluded that the groups were similar and could be combined to compare systems. The subjects elected to participate in the present study from among other alternatives to meet a course research participation requirement.

The mean age of the subjects was 18.8 years (SD=1.7) with 70% being female and 70% white, 11% Native American, 11% black, 8% other. The majority of subjects were freshman (64%) and their declared majors were business (33%), psychology (9%), biological science (4.5 %), communications (4.5%), clothing and textiles (4.5%), and nursing (4.5%). Ten percent were undecided. Some subjects reported having received prior career assistance: individual counseling (25%); career course (11%); and some type of CACG system (14%).

Computer-Assisted Career Guidance Systems

DISCOVER for Schools (DISCOVER). DISCOVER (American College Testing Program, 1984) 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 (Maze and Cummings, 1982). 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.

System of Interactive Guidance and Information (SIGI). SIGI (Educational Testing Service, 1984) helps 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 (Katz, 1973; 1980). The five SIGI subsystems include: 1) VALUES, 2) LOCATE, 3) COMPARE, 4) PLANNING, and 5) STRATEGY. SIGI PLUS was developed in response to comments from users and counselors concerning the effectiveness of SIGI with a diverse group of individuals, especially adults.

SIGI PLUS. SIGI PLUS (Educational Testing Service, 1985) is also designed to facilitate rational career decision making. In comparison with SIGI, SIGI PLUS: 1) provides greater diversity of self-assessment options, 2) is more flexible in terms of user control of system functioning, 3) provides specific content material related to the needs of typical adult learners as well as traditional college-age students, 4) includes content related to the job search process, 5) provides for easier customization of local data, and 6) makes use of color graphics. SIGI PLUS has nine sections that include: INTRODUCTION, SELF-ASSESSMENT, SEARCH, INFORMATION, SKILLS, PREPARING, COPING, DECIDING, and NEXT STEPS. Katz (1984) provided a description of the initial design of the system. The basic assumptions and design features of the system are described by Norris, Shatkin, Schott, & Bennett (1985).

Procedures

The subjects reported at a pre-assigned time to the university career resource center. Upon reporting, they were assigned to one of the three CACG systems, and were given a brief overview of the study. They were asked to complete a research participation release form (see Appendix F) and a demographic questionnaire (Reardon, 1984b). Upon being given an introduction to the purpose, operation, and procedures associated with DISCOVER, SIGI, or SIGI PLUS, subjects were presented with an explanation of data collection procedures, and given a tour of the career resource center. Subjects were then scheduled for initial two hour appointments to begin work on the assigned system. The subjects were told to complete the five SIGI modules, the first three DISCOVER modules, and whichever SIGI PLUS modules most relevant to their career situation. 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 SIGI PLUS. All systems were completed by the subjects within a ten day period at which time the DISCOVER Progress Record and the DISCOVER Evaluation Form, the SIGI Progress Record and SIGI Evaluation Form, or the SIGI PLUS Progress Record and SIGI PLUS Evaluation Form were completed. Subjects in this study also completed the Computer-Assisted Career Guidance Evaluation Form, My Vocational Situation (MVS) by Holland, Daiger, & Power (1980a), and the Occupational Alternatives Question (OAQ) (Zener & Schnuelle, 1972). Subjects were debriefed as a group at the final data collection meeting.

Instrumentation

A field test version of the Computer-Assisted Career Guidance Evaluation Form consisted of 64 items developed to assess the five objectives included in the evaluation standard. Through principle factoring with varimax rotation, the item pool was reduced to 24 items which load on six orthogonal factors, each with eigen values greater than 1.0. The factors shown in Table 1 were labeled in descending order of eigen values: I, Attractiveness of CACG Systems; II, Needs for Occupational

Knowledge; III, Credibility of Alternatives; IV, Knowledge of Occupational Rewards and Demands; V, Satisfaction of Alternatives; and VI, Clarifying Self Knowledge. The final 24-item instrument is shown in Appendix A.

Place Table 1 about here

The items comprising the above six factors were logically combined to form three higher order composite scales: Analysis, Synthesis, and Computer Effect. The Analysis Scale consisted of 10 items comprising Factors II, IV and VI and measured how well the CACG system helped individuals acquire self-knowledge and occupational knowledge. Such constructs are fundamental to the ability to formulate plausible career alternatives. The Synthesis Scale was composed of 5 items loading on Factors III and V. This scale assessed the degree to which a CACG system helped users to identify potential career alternatives. The third scale, Computer Effect, was composed of only a single factor (I) with 9 items which measured the degree to which individuals found interacting with the computer rewarding. The intercorrelations among the three composite scales ranged from .39 to .60, while the respective alpha reliabilities were Analysis, .83; Synthesis, .77; and Computer Effect, .87 (Table 2). Thus the scales were considered as independent and reliable measures.

Place Table 2 about here

These three scales can now be used to compare the degree to which different CACG systems perform three vital functions in career decision-making. These include, becoming familiar with oneself and the world of work (Analysis), developing and evaluating career options (Synthesis), and believing that one is being helped (Computer Effect).

The client characteristics that may bear on the impact of CACG systems were measured by My Vocational Situation (Holland, Daiger, & Power, 1980a) and the Occupational Alternatives Question (Zener, & Schnuelle, 1972). The Occupational Alternatives Question (OAQ) consisted of two parts: (a) "list all the occupations you are considering right now," and (b) "which occupation is your first choice? (if undecided, write undecided)". The test-retest reliability of a questionnaire that included this question was .93 (Redmond, 1973). Two studies (Slaney, 1980; Slaney, Stafford, & Russell, 1981) demonstrated that the OAQ had considerable concurrent validity with other measures of career indecision when the responses were scored as follows: 1 = a first choice is listed without any alternatives, 2 = a first choice is listed along with alternatives, 3 = no first choice is listed, just alternatives, and 4 = neither first

choice nor alternatives are listed. This scoring system was used in the present study.

The My Vocational Situation (MVS) (Holland, Daiger, & Power, 1980a) contains three scales: Identity (I), Information Needs (MVSIN), and Barriers (MVSBAR). The Identity subscale of the MVS was developed by combining two earlier scales, the Vocational Decision-Making Difficulty Scale (VDMN; Holland & Holland, 1977) and the Identity Scale (Holland, Gottfredson, & Nafzinger, 1975). Factor analyses indicated that these two scales had similar factor structures and measured the same dimensions for both sexes (Holland, Daiger, & Power, 1980b). The estimate of reliability (KR-20) for college students was .89 (Holland, Magoon, & Spokane, 1981). KR 20's show relatively low external consistency for the MVSIN (male = .79, female = .77) and MVSBAR (male = .45, female = .65), indicating that they resemble checklists more than scales (Holland, Daiger, and Power (1980a). Additional data on the development and the concurrent validity of the Vocational Identity scale were presented in Holland, Daiger, and Power (1980b).

For the field test, the DISCOVER Progress Record, the SIGI Progress Record, and the SIGI PLUS Progress Record (Reardon, 1984a) (see Appendices B, C, & D) were designed to verify the extent to which DISCOVER, SIGI, and SIGI PLUS were actually used by subjects. Basic demographic data and information related to subjects' prior experience with career counseling services, including computer applications, were also collected (Reardon, 1984b) (see Appendix E) in the field test.

Data Coding

For data analysis, the OAQ score values were recoded (1) low and (2) high career decidedness based on the median split of the scores of the subjects in this study. High career decidedness included those individuals who indicated either a first choice only or a first choice plus alternatives. Low career decidedness included those subjects who listed alternatives but no first choice, as well as those who had neither a first choice nor alternatives.

Subjects' scores on the Vocational Identity subscale of My Vocational Situation were similarly divided into two levels of vocational identity based on the median split of the current sample. Thus subjects scoring ten or less were regarded as having low vocational identity, whereas clients scoring from eleven to eighteen points were regarded as having high vocational identity. The means and standard deviations were reported as 11.25 and 4.14 for college men and 10.13 and 4.23 for college women (Holland, Daiger, & Power, 1980b).

The sum of the "N" responses to the four items on the Information Needs subscale (MVSIN) of the My Vocational Situation provided an index of subjects' expressed information needs. For analyses, subjects were divided into those who (1) expressed no

need for information, and (2) those who expressed current needs for information. Similarly, the Barriers subscale of the MVS (MVSBAR), provided an index of subjects' perceived barriers in achieving career goals. Subjects were divided into two groups, those who (1) expressed no difficulties, and (2) those who saw barriers in accomplishing their goals. Subjects' year in school (YEAR) was obtained from the demographic questionnaire and recoded for analysis into (1) Freshman, or (2) Sophomore, Junior, or Senior.

Data Analysis

A one-way MANOVA with three levels of computer (DISCOVER, SIGI, or SIGI PLUS) was used to ascertain whether there was a multivariate effect among the respective CACG systems. The dependent variables included Analysis, Synthesis, and Computer Effect, while age, OAQ scores, and MVS scores were used as covariates to partial out variance attributed to subject entry characteristics. A series of 15 post-hoc 2X3 ANOVA's (two levels of client characteristics X three levels of computer) were conducted to determine whether high or low age, OAQ, or MVS scores were related to perceptions of CACG system effectiveness (i.e., analysis, synthesis, and computer effect) among the three systems.

Results

Zero order correlations among the variables in the study are presented in Table 3. For these 127 subjects, career decidedness (OAQ), but not vocational identity (MVSID), was significantly ($p < .05$) related to subjects' perceptions of the CACG systems. Subjects who were more decided about their career goals viewed CACG systems more positively in terms of: (1) helping individuals to acquire self-knowledge and occupational knowledge (Analysis); (2) helping users to identify potential career options (Synthesis); and (3) obtaining a more enjoyable and rewarding computer interaction (Effects).

Place Table 3 about here

As was expected on the basis of previous research, career decidedness (OAQ) was significantly ($p < .001$) related to the MVS vocational identity scale. Persons whose career goals are more decided have a more crystallized vocational identity. Vocational Identity score was also positively correlated to expressed need for help in diverse areas of concern (MVSIN). There was a significant positive correlation between information needs (MVSIN) and subjects' perception of the degree to which the CACG system was helpful in identifying career options (Synthesis).

The results of a Multivariate Analysis of Variance with three dependent variables, Analysis, Synthesis and Computer Effect, demonstrated that there was a significant difference ($p <$

.05) among the CACG systems (see Table 4). The potential sources of error due to indecision (4 variables) and year in school were removed through covariance.

Place Table 4 about here

Univariate tests of the dependent variables indicated that there were significant differences among the three systems according to the Synthesis Scale ($p < .02$), but not according to either the Analysis or Computer Effect Scales. SIGI PLUS outperformed DISCOVER, which in turn outperformed SIGI on the degree to which users were satisfied with the career alternatives generated by the systems. Mean ratings of all three scales among all three instruments were positive.

In order to ascertain whether the effectiveness of the CACG system was a function of a client's state of career decidedness, a series of 3 X 2 (Type of Treatment X Level of Attribute) ANOVAs were conducted using high and low groups for year in school, OAQ, and MVS-Identity, MVS-Information Needs, and MVS-Barriers. There were no main effects nor interaction on any of the three dependent measures using the year in school, MVS-Identity or MVS-Barriers scales as moderator variables. Using the MVS-Information Needs scale as a moderator variable, subjects with information needs rated all three systems significantly higher ($P < .001$) on the Synthesis Scale than subjects with no information needs (see Table 5, Figure 1). These results suggest that individuals with information needs rate all systems higher regarding the generation of alternatives than individuals who do not express information needs.

Place Table 5 and Figure 1 about here

Using the OAQ as moderator variable, there were inconclusive results pertaining to the relationship between career decidedness and ratings of computer effectiveness. The ANOVA's revealed no new information beyond the correlational analyses above.

Discussion

The results of this study are important for three reasons. First, an instrument has been developed to evaluate the effectiveness of CACG systems. This instrument, the Computer-Assisted Career Guidance Evaluation Form, contains 24-items comprising six factors, that were combined to form three higher order composite scales: Analysis, Synthesis and Computer Effect. The alpha reliabilities of these three scales were judged sufficiently high to consider the scales reliable measures for use in comparative research on CACG systems.

Second, the Computer-Assisted Career Guidance Evaluation Form was subsequently used to compare the effectiveness of DISCOVER, SIGI, and SIGI PLUS. All three CACG systems were rated positively by most subjects on all three dimensions, Analysis, Synthesis, and Computer Effect. There may be statistically significant differences among CACG systems in each aspect of perceived effectiveness, but whether these differences are of practical significance is still open to question. Individuals who admit to having career information needs respond more favorably to the career options developed through their interaction with the computer than those who do not, regardless of the system. Those clients who expressed no information needs, while less satisfied with alternatives generated by the computer than those who do, still rated the CACG systems positively on Analysis and Computer Effect. They ostensibly enjoyed self-exploration and using the computer as strongly as those subjects with expressed information needs.

Third, these results show that perceived effectiveness of CACG systems may be related to the state of client career decidedness and vocational identity. Individuals who had high career decidedness, as measured by the OAQ, differed significantly from those who had low career decidedness in their preference for a CACG system. This effect, while statistically significant ($p < .05$) may not be practically significant with correlation coefficients between .17 and .20.

These findings suggest that, among the three CACG systems compared, there are no differences among the systems pertaining to their capabilities for fostering self-exploration, exploration of career options, and the perception that the CACG system was helpful. The subjects using SIGI PLUS rated this system higher in terms of satisfaction with career alternatives generated than subjects who used DISCOVER or SIGI. A limitation of the study was that the clients were solicited for career assistance. Further investigations using actual client populations would be warranted. Caution is also recommended in generalizing the findings of this study to other student populations, particularly non-white, non-female groups, given the preponderance (70%) of white, female subjects in the current sample.

References

American College Testing Program. (1984). DISCOVER for Schools. Hunt Valley, MD: Author.

Cairo, P.C. (1983). Evaluating the effects of computer-assisted counseling systems: A selective review. The Counseling Psychologist, 11(4), 55-59.

Chapman, W. (1975). Counselor's handbook for SIGI. Princeton, NJ: Educational Testing Service.

Clyde, J.S. (1979). Computerized career information and guidance systems. Columbus, OH: The Ohio State University, ERIC Clearinghouse on Adult, Career, and Vocational Education. (ERIC Document Reproduction Service No. ED 179 764).

Educational Testing Service. (1984). System of Interactive Guidance and Information. Princeton, NJ: Author.

Educational Testing Service. (1985). SIGI PLUS. Princeton, NJ: Author.

Fretz, B.R. (1981). Evaluating the effectiveness of career interventions. Journal of Counseling Psychology, 28, 77-90.

Fretz, B.R., & Leong, F.T.L. (1982). Career development status as a predictor of career intervention outcomes. Journal of Counseling Psychology, 29, 388-393.

Gelatt, H.B. (1962). Decision-making: A conceptual frame of reference for counseling. Journal of Counseling Psychology, 9, 240-245.

Harris-Bowlsbey, J. (1983a). A historical perspective. In C. Johnson (Ed.), Microcomputers and the school counselor (pp. 1-16). Alexandria, VA: American School Counselor Association.

Harris-Bowlsbey, J. (1983b). The computer and the decider. The Counseling Psychologist, 11, 9-14.

Harris-Bowlsbey, J. (1985). Systematic career guidance and computer-based systems. In Z.B. Leibowitz, & H.D. Leo (Eds.). (1985). Adult career development: Concepts, issues and practices (pp. 95-107). Alexandria, VA: American Association for Counseling and Development.

Holland, J.L., Daiger, D.C., & Power, P.G. (1980a). My Vocational Situation. Palo Alto, CA: Consulting Psychologists Press.

Holland, J.L., Daiger, D.C., & Power, P.G. (1980b). Some diagnostic scales for research in decision making and personality: Identity, information, and barriers. Journal of Personality and Social Psychology, 39(6), 1191-1200.

Holland, J.L., Gottfredson, G.D., & Nafzinger, D.H. (1975). Testing the validity of some theoretical signs of vocational decision-making ability. Journal of Counseling Psychology, 22, 411-422.

Holland, J.L., & Holland, J.E. (1977). Vocational indecision: More evidence and speculation. Journal of Counseling Psychology, 24, 404-414.

Kapes, J.T., Borman, C.A., Garcia, G.,Jr., & Compton, J.W. (1985, April). Evaluation of microcomputer based career guidance systems with college students: SIGI and DISCOVER. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Kapes, J.T., Borman, C.A., & Kimberly, R.M. (1985, January). Using microcomputer based career guidance systems in a university setting: Reaction data from users. Paper presented at the annual meeting of the Southwest Educational Research Association, Austin.

Katz, M.R. (1966). A model of guidance for career decision-making. Vocational Guidance Journal, 15, 2-10.

Katz, M.R. (1973). Career decision-making: A computer-based System of Interactive Guidance and Information (SIGI). From Proceedings of the 1973 Invitational Conference on Testing Problems--Measurement for Self-Understanding and Personal Development, Educational Testing Service.

Katz, M.R. (1980). SIGI: An interactive aid to career decision-making. Journal of College Student Personnel, 21, 34-40.

Katz, M. R. (1984). Computer-assisted guidance: A walk-through with running comments. Journal of Counseling and Development, 63, 153-157.

Katz, M.R., & Shatkin, L. (1983). Characteristics of computer-assisted guidance. The Counseling Psychologist, 11, 15-31.

Maze, M., & Cummings, R. (1982). Analysis of DISCOVER. In M. Maze, & R. Cummings (Eds.), How to select a computer-assisted guidance system (pp. 97-107). Madison, WI: University of Wisconsin, Wisconsin Vocational Studies Center.

Norris, L., & Shatkin, L., Schott, P. S., & Bennett, M. F. (1985). SIGI PLUS: Development and field test of the computer-based System of Interactive Guidance and Information...PLUS MORE. Unpublished manuscript, Educational Testing Service, Princeton, NJ.

Osipow, S.H., Carney, C.G., Winer, J.L., Yanico, B.J., & Koschier, M. (1976). The Career Decision Scale. Columbus, OH: Marathon Consulting & Press.

Parish, P.A., Rosenberg, H., & Wilkinson, L. (1979). Career information resources, applications, and research 1950-1979. Boulder, CO: University of Colorado.

Peterson, G.W., Sampson, J.P., Jr., & Reardon, R.C. (1985). DISCOVER Evaluation Form & SIGI Evaluation Form & SIGI PLUS Evaluation Form. Unpublished manuscripts, Florida State University, Project LEARN--Phase II, Tallahassee.

Rayman, J.R., Bernard, C.B., Holland, J.L., & Barnett, D.C. (1983). The effects of a career course and some other popular treatments. Journal of Vocational Behavior, 23, 346-355.

Reardon, R.C. (1984a). DISCOVER Progress Record, & SIGI Progress Record Log. Unpublished manuscripts, Florida State University, Project LEARN--Phase II, Tallahassee.

Reardon, R.C. (1984b). Computer-Assisted Career Guidance Questionnaire. Unpublished manuscript, Florida State University, Project LEARN--Phase II, Tallahassee.

Redmond, R.E. (1973). Increasing vocational information seeking behaviors of high school students (Doctoral dissertation, University of Maryland). Dissertation Abstracts International, 34, 2311A-2312A. (University Microfilms No. 73-17,046)

Remer, P., O'Neill, C.D., & Gohs, D.E. (1984). Multiple outcome evaluation of a life-career-development course. Journal of Counseling Psychology, 31, 532-540.

Sampson, J.P., Jr., McMahon, B.T., & Burkhead, E.J. (1985). Using computers for career exploration and decision-making in vocational rehabilitation. Rehabilitation Counseling Bulletin, 28, 242-261.

Sampson, J.P., Jr., & Peterson, G.W. (1984). Evaluation standard: Computer-Assisted career guidance systems. Unpublished manuscript, Florida State University, Project LEARN--Phase II, Tallahassee.

Slaney, R.B. (1980). Expressed vocational choice and vocational indecision. Journal of Counseling Psychology, 27, 122-129.

Slaney, R.B. (1983). Influence of career indecision on treatments exploring the vocational interests of college women. Journal of Counseling Psychology, U30, 55-63.

Slaney, R.B., & Dickson, R.D. (1985). Career exploration with reentry women. Journal of Counseling Psychology, 32, 355-362.

Slaney, R.B., Stafford, M.J., & Russell, J.E.A. (1981). Career indecision in adult women: A comparative and descriptive study. Journal of Vocational Behavior, 19, 335-345.

Splete, H.H. (1984). Computerized career guidance systems and career counseling services. Unpublished manuscript, Oakland University, Adult Career Counseling Center, Rochester, MI.

Splete, H.H., Elliot, B.J., & Borders L.D. (1985). Computer-assisted career guidance systems and career counseling services. Unpublished manuscript, Oakland University, Adult career Counseling Center, Rochester.

Spokane, A., & Oliver, L. (1983). The outcomes of vocational intervention. In W.B. Walsh and Osipow (Eds.), Handbook of vocational psychology (vol. 2) (pp. 96-136). Hillsdale, NJ: Lawrence Erlbaum Associates.

Super, D.E. (1973). Computers in support of vocational development and counseling. In H. Borow (Ed.), Career guidance for a new age (pp. 285-316). Boston: Houghton Mifflin Co.

Zener, T.B., & Schnuelle, L. (1972). An evaluation of the Self-Directed Search (Research Report 124). Baltimore, MD: John Hopkins University Center for Social Organization of Schools. (ERIC Document Reproduction Service No. ED 061458).

TABLE 1

Varimax Rotated Factor Matrix for Student Perceptions of CACG systems

	FACTORS					
	F_1	F_2	F_3	F_4	F_5	F_6
ANALYSIS I (Self Information)						
10. The computer was helpful in accurately clarifying my interests.	.370	.123	.139	.102	.053	.709
9. The computer was helpful in accurately clarifying my values.	.166	.314	.382	.195	-.091	.525
3. The computer was helpful in showing me whether or not I needed more information about myself before making career decisions.	.251	.501	.145	.034	.133	. 243
ANALYSIS II (Occupational Information)						
22. The computer helped me to learn much more about several occupations.	.252	.699	.098	.216	.074	-.097
23. The computer helped me better understand how the world of work is organized.	.154	.566	-.000	.026	-.093	.067
18. The computer helped me to become more familiar with the educational requirements of potential occupational choices.	.079	.563	-.028	.430	.166	.130

(table continues)

	FACTORS					
	F_1	F_2	F_3	F_4	F_5	F_6
30. The computer helped me to identify important milestones to achieve in attaining a career, such as educational degrees,training, or licenses.	.255	.533	.026	.199	.208	-.061
5. The computer was helpful in showing me whether or not I needed more information about occupations before making career decisions.	.100	.514	.038	.083	.048	.133
19. The computer helped me understand the demands associated with potential occupational choices, such as amount of free time, vacations, and continuing education.	.135	.245	.097	.919	.020	.085
20. The computer helped me to understand the rewards potential occupations offer, such as salary, interesting work, prestige, variety, and challenge.	.083	.213	.016	.573	.327	.129
SYNTHESIS (Occupational Options)						
13. The computer satisfied me with the variety of career options it gave me to consider.	.307	.126	.241	.115	.678	.023

(table continues)

	FACTORS					
	F_1	F_2	F_3	F_4	F_5	F_6
17. I can seriously consider most of the occupations the computer suggested.	.160	-.052	.655	.058	.142	.090
14. The computer satisfied me with the number of career options it gave me to consider.	.229	.080	.286	.192	.563	-.035
15. The computer presented logical career options given my values, interests and abilities.	.090	-.035	.524	.029	.289	.155
27. The computer helped me feel confident that I would find most of the final list of potential occupations satisfying.	.292	.188	.754	.004	.040	.046
EFFECTS OF THE COMPUTER						
1. The computer helped me become more confident of being able to choose a satisfying occupation.	.529	.138	.425	.011	.142	.037
48. I understand myself better now.	.583	.298	.064	-.020	.197	.229
59. Using the computer is like talking with a career counselor.	.549	.171	.090	-.055	.179	-.009

(table continues)

	FACTORS					
	F_1	F_2	F_3	F_4	F_5	F_6
41. The computer helped me to feel more hopeful of finding a satisfying occupation.	.577	.270	.337	.109	.258	.056
55. I have learned about some new educational programs as a result of using the computer.	.494	.242	.024	.207	.052	.147
37. I felt the computer understood my career problems.	.635	.111	.124	.147	-.007	.170
43. The computer answered most of my career questions to my satisfaction.	.539	.167	.364	.398	.052	-.174
54. I felt better about my career after I used the computer.	.573	.193	.290	.206	.107	.165
51. My family or friends liked the outcomes suggested by the computer.	.601	.133	.179	.037	.147	.143

TABLE 2

Intercorrelations Among Scales of the Computer-Assisted Career Guidance System Evaluation Form, Their Means, Standard Diviations and Alpha Reliability Coefficients (n=127)

Measure	Correlations 1	2	3	Grand Means	SD	Alpha
1. Analysis (10 items)	1.0			.777	.487	.83
2. Synthesis (5 items)	.39	1.0		.606	.714	.77
3. Effectiveness (9 items)	.60	.58	1.0	.437	.630	.87

Table 3

Intercorrelation Matrix (n=127)

Variables	Correlations 1	2	3	4	5	6	7	8
1. Analysis	-							
2. Synthesis	.39***	-						
3. Effect	.60***	.58***	-					
4. Year[a]	.02	.08	-.02	-				
5. OAQ[b]	.17*	.18*	.20*	-.11	-			
6. MVSID[c]	.05	.10	.04	.02	.29***	-		
7. MVSIN[d]	-.06	.26**	.05	.12	.05	.36***	-	
8. MVSBAR[e]	-.06	-.02	-.08	.00	-.01	-.10	-.05	-

[a] Year in school (1=Freshman, 2=Sophomore, Junior, Senior)
[b] Occupational Alternatives Question Score (1=first choice only or first choice plus alternatives, 2=alternatives only or neither first choice nor alternatives)
[c] My Vocational Situation - Vocational Identity Score (1=low identity, 2=high identity)
[d] My Vocational Situation - Information Needs Score (1=no information needs, 2=need information)
[e] My Vocational Situation - Barriers Score (1=no barriers, 2=barriers present)

* $p < .05$
** $p < .01$
*** $p < .001$

Table 4

MANOVA Summary Table

	SIGI (n=60)		DISCOVER (n=33)		SIGI PLUS (n=29)	
	M	SD	M	SD	M	SD
Dependent Variables						
Analysis[a]	.76	.49	.81	.45	.78	.55
Synthesis[a]	.53	.74	.64	.83	.72	.56
Effect[a]	.37	.65	.54	.68	.49	.54
Moderator Variables						
Year[b]	1.55	.87	1.45	.75	1.62	.90
OAQ[c]	2.30	.56	2.42	.56	2.34	.48
MVSID[d]	10.50	4.50	11.33	5.24	9.76	4.90
MVSIN[e]	1.02	1.19	1.52	1.44	.62	.78
MVSBAR[f]	3.57	.62	3.39	.79	3.59	.68

Multivariate Tests of Significance

Test Name	Value	F	DF	Error DF	Sign. of F
Pillais	.22	1.82	15	342.00	.03*
Hotellings	.25	1.83	15	332.00	.03*
Wilk's	.79	1.83	15	309.58	.03*
Roys	.14				.05*

Univariate F Tests (5,114)

Variable	SS	MS	F	Sign of F
Analysis	1.50	.30	1.23	.30
Synthesis	6.74	1.35	2.73	.02*
Effect	2.57	.51	1.30	.27

[a] Scoring: 5-point Likert-type scale, where -2 = strongly disagree; -1 = disagree; 0 = neutral; +1 =agree; +2 = strongly agree

[b] Scoring: 1 = freshman; 2 = Sophomore; 3 = Junior; 4 = Senior; 5 = Graduate Student; 6 = Adult, not presently tlenrolled

[c] Scoring: 1 = first choice only, no alternatives; 2 = first choice with alternatives; 3 = no first choice, alternatives only; 4 = neither first nor alternatives

[d] Scoring: total number of "False" responses on the Vocational Identity subscale

[e] Scoring: total number of "No" responses to the four items identifying current information needs

[f] Scoring: total number of "No" responses to the four items identifying current barriers to meeting career goals

* $p < .05$

Table 5

Comparison of the Synthesis Function According to CACG Systems with My Vocational Situation Information Needs Scale as Moderator Variable

	Systems		
MVSIN	SIGI	DISCOVER	SIGI PLUS
HIGH	M = .63[a] SD = .72 (N = 35)	M = .88 SD = .59 (N = 22)	M = .83 SD = .46 (N = 13)
LOW	M = .27 SD = .83 (N = 31)	M = .15 SD =1.03 (N = 11)	M = .66 SD = .62 (N = 17)

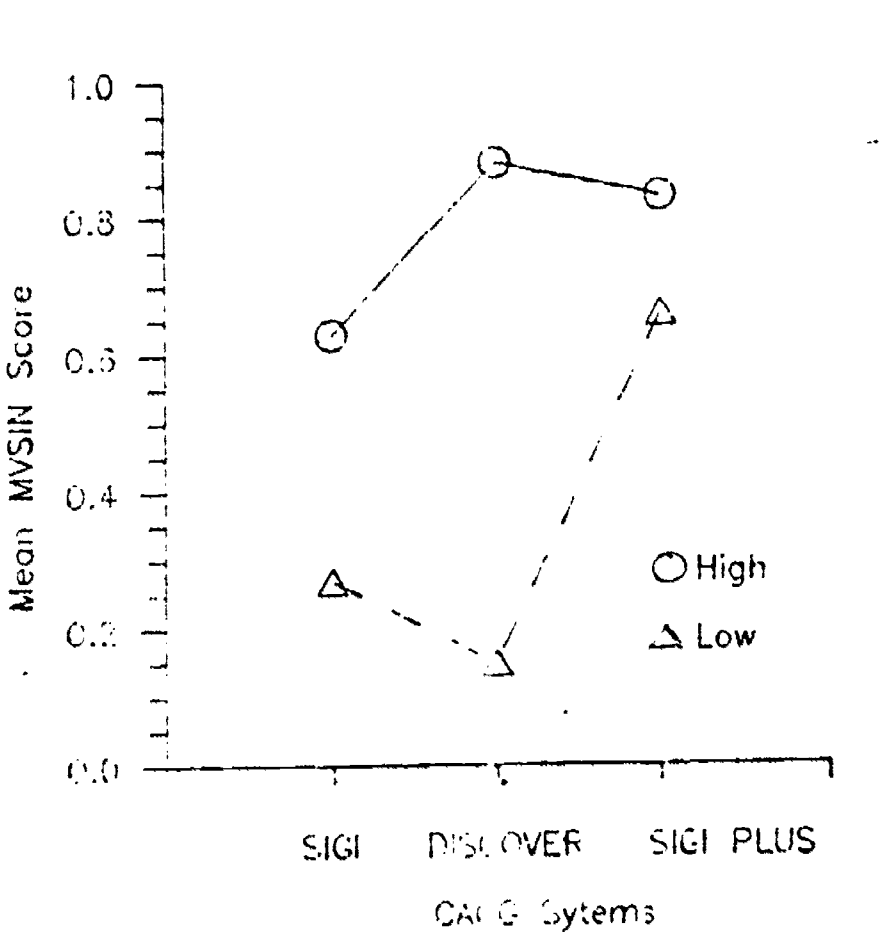
Source Table

Source of Variation	SS	MS	DF	F	Sign. of F
Main Effects	5.79	1.93	3	3.99	.01**
System	.96	.48	2	.99	.37
MVSIN	5.12	5.12	1	10.59	.001***
System X MVSIN	1.12	.56	2	1.16	.32
Explained	6.91	1.38	5	2.86	.02*
Residual	57.01	.48	118		

[a] On a 5-point Likert-type scale scored as follows: -2 = strongly disagree, -1 = disagree, 0 = neutral, +1 = agree, and +2 = strongly agree.

* p < .05
** p < .01
*** p < .001

Figure 1
Comparison of the Synthesis Function According to CACG Systems with MVSIN as Moderator Variable



APPENDIX A

1

COMPUTER-ASSISTED CAREER GUIDANCE EVALUATION FORM[1]

Name _____ Date _____

Soc. Sec. No. _____

PLEASE USE THIS FORM TO EVALUATE THE _____ SYSTEM.

1. Identify the sections/modules that you are evaluating today.

_____ _____

_____ _____

_____ _____

_____ _____

2. List all occupations you are considering right now.

_____ _____

_____ _____

_____ _____

3. Which occupation is your first choice? (If undecided, write "undecided.")

_____

FOR QUESTIONS 4 AND 5, CHOOSE A RESPONSE AND PLACE THE NUMBER IN THE SPACE IN THE RIGHT MARGIN WHERE INDICATED:

4. How well satisfied are you with your first choice?....4._____
   1. Well satisfied with choice
   2. Satisfied, but have a few doubts
   3. Not sure
   4. Dissatisfied, but intend to remain
   5. Very dissatisfied and intend to change
   6. Undecided about my future career

5. How long did you use the computer at this session?....5._____
   1. 30 minutes or less
   2. 30 minutes to 1 hour
   3. 1 hour to 1 1/2 hours
   4. 1 1/2 hours to 2 hours
   5. 2 hours or longer

(Continued on next page)

[1] Authored by Gary W. Peterson, Ph.D., Rebecca E. Ryan-Jones, M.Ed., James P. Sampson, Jr., Ph.D. and Robert C. Reardon, Ph.D. Center for the Study of Technology in Counseling and Career Development, Florida State University. April, 1988.

2

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE APPROPRIATE NUMBER ACCORDING TO THE KEY BELOW.

1 Strongly Disagree (SD)	2 Disagree (D)	3 Neutral (N)	4 Agree (A)	5 Strongly Agree (SA)	6 Does Not Apply (DNA)

	SD	D	N	A	SA	DNA
1. The computer helped me to learn much more about several occupations.	1	2	3	4	5	6
2. The computer was helpful in showing me whether I needed more information about occupations before making career decisions.	1	2	3	4	5	6
3. Using the computer was like talking to a career counselor.	1	2	3	4	5	6
4. The computer presented logical career options given my values, interests, and abilities.	1	2	3	4	5	6
5. The computer helped me to understand the rewards potential occupations offer, such as salary, interesting work, prestige, variety, and challenge.	1	2	3	4	5	6
6. I felt the computer understood my career problems.	1	2	3	4	5	6
7. I have learned about some new educational programs as a result of using the computer.	1	2	3	4	5	6
8. The computer helped me feel confident that I would find most of the final list of potential occupations satisfying.	1	2	3	4	5	6
9. The computer satisfied me with the variety of career options it gave me to consider.	1	2	3	4	5	6
10. The computer helped me to become more familiar with the educational requirements of potential occupational choices.	1	2	3	4	5	6
11. The computer was helpful in accurately clarifying my values.	1	2	3	4	5	6

(Continued on next page)

1 Strongly Disagree (SD)	2 Disagree (D)	3 Neutral (N)	4 Agree (A)	5 Strongly Agree (SA)	6 Does Not Apply (DNA)

		SD	D	N	A	SA	DNA
12.	The computer helped me to feel more hopeful of finding a satisfying occupation.	1	2	3	4	5	6
13.	I can seriously consider most of the occupations the computer suggested.	1	2	3	4	5	6
14.	My family or friends would like the outcomes suggested by the computer.	1	2	3	4	5	6
15.	The computer satisfied me with the number of career options it gave me to consider.	1	2	3	4	5	6
16.	The computer was helpful in accurately clarifying my interests.	1	2	3	4	5	6
17.	The computer was helpful in showing me whether I needed more information about myself before making career decisions.	1	2	3	4	5	6
18.	The computer helped me understand the demands associated with potential occupational choices, such as amount of free time, vacations, and continuing education.	1	2	3	4	5	6
19.	The computer answered most of my career questions to my satisfaction.	1	2	3	4	5	6
20.	The computer helped me to identify important milestones to achieve in attaining a career, such as educational degrees, training, or licenses.	1	2	3	4	5	6
21.	The computer helped me better understand how the world of work is organized.	1	2	3	4	5	6
22.	I understand myself better now.	1	2	3	4	5	6
23.	I felt better about my career after I used the computer.	1	2	3	4	5	6
24.	The computer helped me become more confident of being able to choose a satisfying occupation.	1	2	3	4	5	6

APPENDIX B

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	
(1)___/___/___	___hr.	___min.
(2)___/___/___	___hr.	___min.
(3)___/___/___	___hr.	___min.

Check Section Used:

* ___1. Learning about yourself
- ___a. Insterests
- ___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 C

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 D

NAME:_____
(print)

SIGI PLUS 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 whichever sections of SIGI PLUS are most relevant to your needs, and (2) complete the evaluation forms provided. This set of instruments will help us evaluate SIGI PLUS. Thank you for your help.

Appointment Date:	Time on SIGI PLUS	Check Section Used:
(1)__/__/__	___hr. ___min.	___1. INTRODUCTION
(2)__/__/__	___hr. ___min.	___2. SELF-ASSESSMENT
(3)__/__/__	___hr. ___min.	___3. SEARCH
		___4. INFORMATION
		___5. SKILLS
		___6. PREPARING
		___7. COPING
		___8. DECIDING
		___9. NEXT STEPS

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

Appendix E

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

NICATION
Audiology & Speech Pathology
Communications

NOLOGY
Criminology

TION
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

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 _____