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ABSTRACT

Preliminary results of an evaluation conducted by the Center for Career Education for the Maine Occupational Information Coordinating Committee (MOICC) are presented. This evaluation focuses on the impact of the Guidance Information System (GIS), a computer information system, developed by MOICC. Data indicate that GIS has had an impact on career awareness of its users, on goal setting and in decision making skills. It has little impact on self-awareness, a function not built into the files. Agency users have better knowledge of job-keeping skills than public school users. Many students were confused with the operation and use of the system, and counselors should be more available to help students. The computer is not an accepted or valuable tool for all students. Alternatives to the GIS need to be developed. Data suggest a more precise strategy is needed to introduce potential users to GIS. Student needs, counselor role and curriculum needs in public schools were considered. (BEF)

PRELIMINARY EVALUATION REPORT
MOICC: GUIDANCE INFORMATION SYSTEM

July 1979

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FOREWORD

This report was prepared to provide preliminary data analysis on the initial field implementation of GIS in selected Maine public schools and agencies. All sites volunteered to participate in the field test after initial contact and explanation by MOICC staff. To date the results are most gratifying and indicate a serious effort by field site staff to fully utilize GIS. Several sites will need extra implementation time to train staff and design a strategy for reaching more potential users.

In reviewing this report we encourage all readers to communicate with us regarding data interpretation and/or any conclusions drawn by us. It is our intent to provide MOICC staff with an accurate interpretation of field test results in relation to impact on users, schools and agencies. To accomplish this we need and welcome your comments.

C. W. Ryan &
R. J. Drummond
July 22, 1979

SECTION I

INTRODUCTION

This report presents the preliminary results of the evaluation conducted by the Center for Career Education under a contract from the Maine Occupational Information Coordinating Committee. MOICC is charged by Executive Order of the Governor (August, 1978) to promote and develop a statewide system for career information. In addressing this mission MOICC serves as a coordinating committee to bring various government and education agencies together in addressing issues related to career guidance, career information and models for delivery. Evaluation results reported here focus only on the impact of the Guidance Information System (GIS) on selected users in public schools and agencies.

The selection of GIS as a prototype to demonstrate in selected schools and agencies was the result of careful analysis of existing computer information system. Computers have been used in disseminating career information for at least a decade. In this period a variety of critical questions have been troublesome to both developers and potential users of these systems. For example:

1. Which guidance tasks can be performed by a computer, and which of these tasks should be reserved for counselor attention?

2. Is it ethical for a machine to assist a student with career decision making?
3. Should a computer-based guidance system be modeled after what counselors do when performing the same functions, or does the computer have unique capabilities which could be applied to perform the same tasks in a different way?
4. How can computer-based systems be maximally integrated into a total guidance program?
5. What hardware and software capabilities can schools currently afford? Can they afford cathode ray tubes as opposed to typewriter terminals; or even cathode ray tubes with complementary visuals? Can schools afford natural language capability as opposed to selection of multiple-choice items?
6. Will schools and agencies pay for computer-assisted instruction in career guidance content areas, or only for information retrieval and search strategy functions?
7. Should career guidance systems be developed as "stand-alone" systems which require a computer dedicated for this purpose alone, or should they be developed for placement in a computer which is also performing a host of other administrative and/or instructional tasks?

8. Should user records be stored in the computer so that personal information can be used in conjunction with the information and experiences provided by the system?
9. Is it possible to create a data collection method which will provide sufficient, recent, and accurate data and which can be used by all developers alike?
10. How can the immense technical problems involved in such sytems be surmounted, and how can "counselor-type" people learn to communicate with data processing specialists?

These are just a few of the issues which have been faced for the first time in the past ten years. In any pioneer effort where such base-line questions are still fresh and unanswered, and especially where funds have been precarious and inadequate, it is to be expected that neither the research questions nor answers are clear and definitive. Every developer of these early guidance systems has attempted to measure the effectiveness of his or her work. After the developer finally wins or survives the battle of grappling with what the system should do and how it should do it, which of a mass of possible hardware and software configurations to get locked into, where to get the money to finance the

development, where to get employees who can be trained for a new field, and how to get the system technically operational on schedule, he/she must then address hard research questions. Several of the more difficult questions are, "What shall we measure?" and "What yardsticks shall we use for measurement?" the "whats" to measure might be cognitive occupational knowledge, short-term occupational choice, long-term occupational satisfaction, decision-making skill, self-knowledge, or vocational maturity, as a possible beginning list. The "what to measure with" problem leads the researcher to look at all existing instruments which measure occupational knowledge, self-knowledge, degree of specification of career plans, decision-making skill, and vocational knowledge and, in so doing, to find that all of the measures are new and experimental and that they do not relate directly to the content of the system which has been developed. The researcher then turns to other valid research techniques such as personal observation, questionnaires, and interviews to collect data, but often struggles with guilt feelings because of the failure to meet the expectation to produce "hard data".

REVIEW OF EXISTING SYSTEMS

In the past decade approximately ten on-line, direct-inquiry computer-based career guidance systems have been developed. Broadly defined, these are systems in which the user communicated directly with the computer's prestored text and files by means of a typewriter or visual display screen terminal for the purpose of receiving vocational and educational information designed to assist with personal career decision making. Each of the sytems developed has had major differences in terms of the proposed conceptual design, the comprehensiveness of objectives, the amount of content, the hardware and software configuration used, the capabilities of the computer used, the cost per hour at the terminal, and the purpose for development of the system. It is not the intent of this report to delineate these differences, but rather to summarize the evaluative findings which have come out of the field trials and operational use of these systems. These findings can most easily be summarized in a series of statements:

1. Students accept computer-based guidance systems with enthusiasm and do not feel dehumanized by them (Chapman, et. al., 1973, Harris, 1972; Myers, et. al., 1971; Impelleteri, 1968). When provided with alternative ways to obtain vocational information, students will choose to use a computer system over books, audio-visual aids,

and other traditional sources.

2. Parents accept computer-based systems with enthusiasm, reporting an increase in home conversation and involvement with career planning as a result of the student's use of such a system (Thompson, et. al., 1971).

3. As a result of the use of computer-based systems, students report the following: (Chapman, et. al., 1973; Harris, 1972; Myers, et. al., 1971; Imelleteri, 1968):

   a. increased awareness of the world of work.

   b. increased awareness of the relationship of self-characteristics (interests, aptitudes, values) to occupational choices;

   c. expansion of the number of vocational options being considered;

   d. greater ability to make vocational and educational decisions;

   e. increase in general occupational knowledge and in knowledge specific to the occupations or institutions reviewed at the terminal;

   f. engaging in exploratory behavior after use of the sytem such as reading, talking to counselors, parents, teachers, or workers in a given occupation; and sending away for additional material;

   g. receiving confirmation of career plans already made;

   h. receiving assistance with crystallizing career plans, if these were in a state of uncertainty.

i. finding most of the information desired about occupations;

j. finding the computer a "fun" experience which they would recommend to a friend.

4. Relatively short use (2-4 hours) of a computer-based system causes a statistically-significant increase in certain components (Awareness of Need to Plan and Knowledge and Use of Resources) of vocational maturity, as measured by the Career Development Inventory (Super, et al., 1971) in two studies (Harris, 1972; Myers, et al. 1971).

5. Use of a computer-based system for collection of information about occupations causes a significant increase in cognitive occupational knowledge (Maola, 1974) as measured by three subscales on the Assessment of Career Development (American College Testing Program, 1973).

6. The computer alone as a delivery system is as effective as the counselor alone in two areas which have been studied, namely selection of courses for the next year in high school (Price, 1971) and provision of vocational guidance assistance to high-ability sophomores (Melhus, 1971). There is evidence, however, that combined use of counselor and computer for delivery of a guidance program has the highest potential for effecting maximum gain (Myers,

et al.. 1972; Melhus, 1971).

GUIDANCE INFORMATION SYSTEM

At the time of this writing, approximately seven computer-based guidance systems operate in schools, colleges and agencies in the United States. Most of what is know about the effectiveness of these sytems has been summarized in the preceding section. GIS, the latest of the computer-based systems, has now made its entrance into this environment. GIS is a sophisticated career information system, consisting of 6 areas of content, which are described in material distributed to each site. The GIS system is a product of 13 years of development, from 1966-1979, which has been supported by the United States Office of Education and by Time Share Corporation, a subsidary of Houghton Mifflin Company, and is intended for use by secondary level students, grades 7-12. The primary purpose of this report is to provide preliminary analysis of the six week GIS field trial, and interpretation of the data collected.

SITE CONTEXT

The basic evaluation plan called for collecting student/adult opinion data at all thirteen sites. Each site demonstrates unique characteristics and it is necessary to differentiate between school and agency users. Differing

missions and expectations of staff, clients and students resulted in GIS being utilized to a high degree in several locations, while others failed to capitalize on the opportunity. A list of the sites follows:

Public School	Public Agency
1. Brewer High School Brewer, Maine	1. Penobscot Consortium (CETA) Bangor, Maine
2. Old Town High School Old Town, Maine	2. Aroostook Community Action Program (ACAP) Houlton, Maine
3. Hodgdon High School Hodgdon, Maine	3. Bureau of Vocational Rehabilitation Augusta, Maine
4. Southern Aroostook Vocational Education Houlton, Maine	4. Maine Job Service Bangor, Maine
5. Lewiston High School Lewiston, Maine	5. University of Maine at Augusta and Kennebec CETA
6. Edward Little High School Auburn, Maine	6. Maine Youth Center South Portland, Maine
	7. Maine Correctional Center South Windham, Maine

It is critical to readers of the report that complexity of data analysis by site be pointed out. The sample population encompassed adults with restricted reading abilities, physical handicaps and personality disorders. Also, included were high school students who represent a more "normal" population, but also exhibiting a variety of learning problems, career interests and varied achievement levels. To draw conclusions that are generalizable to a normal population is difficult and the data reported

here must be viewed in this context.

The design for this evaluation was developed through a series of meetings and visits to all field sites and staff of the Career Education Center. Additional comments regarding instrumentation were solicited for Social Science Research Institute staff and the contact person at each site. Rather than describe each of the 13 sites separetly, the following three categories were designed to provide a general description of the context in which GIS was field tested.

PUBLIC SCHOOLS

A total of six (6) public schools are participating in the project and provide a good sample of different learning environments. Several of the schools are located in sparsely populated rural areas, two in what would be classified as suburban and two in a large metropolitan area. The student population provides a mix of vocational, academic and general program participants. Faculty in these schools possess a level of competence training ranging from bachelors to doctoral level. Preliminary estimates indicate that between 25 to 30 percent have completed training beyond the bachelor's degree.

POSTSECONDARY INSTITUTIONS

The University of Maine at Augusta is a community college which offers programs that lead to Associate of

Arts Degrees and Graphic Arts, Liberal Studies, and Popular Music and Associate of Science Degrees in Architectural and Construction Technology, Business Careers, Business Administration, Criminal Justice, Medical Laboratory Science, Nursing, and Secretarial Science. Students may participate in programs which are directly transferable to universities and colleges which award baccalaureate degrees or may prepare them for employment after the completion of two years. The science degrees in Business Administration are offered by the University of Maine at Augusta primarily as programs for the part-time learner through late afternoon and evening courses.

Principal users of GIS are college students, participants in the Displaced Homemakers Project and the Kennebec County CETA. The environment is best described as an advanced learning institution and emphasis is on preparation for careers in two year programs.

PUBLIC AGENCIES

Participating in the MOICC project are four state and federally funded service agencies that serve a wide range of clients. For example:

1. Maine Youth Center - a correctional facility mandated to rehabilitate wayward youth (ages 10 to 20) and provide guidance and educational

services during this process.

2. Maine Correctional Center - a correctional facility mandated to rehabilitate adult males who are incarcerated for various civil infractions. Inmates range in age from 18 to 65 plus are serving sentences of varying length.

3. CETA - a total of two sites are involved and encompass four counties. The primary mission is to provide educational and counseling services to youth (ages 16-21) and unemployed adults. The basic philosophy of the CETA site is to "effect meaningful improvements in the lives of low and moderate income people in Maine." Activities in the field of employment, job placement, health, housing and special services are a major part of the service.

4. Bureau of Vocational Rehabilitation - basic services related to vocational and occupational adjustment are provided to a wide range of clients. All accepted clients must have documented physical, psychiatric or mental disability which constitutes a substantial vocational handicap and a reasonable chance of returning to gainful employment.

These brief descriptions provide a general overview of the field sites where GIS was tested and used by various target groups. These different environments and populations must be kept in mind as the report is read and data interpreted.

PART II

METHODOLOGY

A posttest only design was utilized to assess the impact of the G.I.S. system on the participating sites. No control groups were selected for the initial field testing of the system.

SELECTION OF SUBJECTS

The site coordinators were asked to follow a quota sampling procedure. They were asked to provide each third user a USER'S LOG to complete after their first session on the terminal or in a group information session to discuss the printout. For those using batch processing, a separate form was utilized but the same selection procedures were suggested. It was suggested that at least 30 participants at each site, wherever possible, be given the instruments to complete. The Post Questionnaire was to be administered to the sample group identified four to six weeks after their exposure to G.I.S.

INSTRUMENTATION

Six different instruments were developed for the project. Two were designed to gather information about the characteristics of the site: An Agency Characteristics Form for the seven public agencies participating in the study (see Appendix A) and a public school form for the six schools (see Appendix B).

To assess the immediate attitudes of the users, a USER'S LOG was constructed. The students were asked some basic demographic information, such as age and sex and then asked to respond to seven questions about the system. There was also a space for the students to comment about GIS if they wished. The log was a brief one page form (see Appendix C).

For those who did not directly use the computer terminal, a Batch Processing Reaction Form was used. This consisted of more questions as well as two demographic questions and a space for other comments (see Appendix D). The questions elicited information on the file or files used, what action the user planned to do as a result of the information, the interest of the system and the clearness of purpose.

Two post questionnaires were developed. There was a five page form for agency participants (see Appendix E) and a seven page form for public school users (see Appendix F). Both questionnaires had items asking participants delayed reactions to using the G.I.S. and what it caused them to do.

PROCEDURES

Data collection in the initial field testing phase of the MOICC study took place between May 4, 1979 and June 15, 1979. Each site was mailed out a packet of instruments with a statement of purpose of the impact study, as well as directions for collecting the data.

Although the system had been installed at the sites prior to that date, it was felt that each site needed time to adjust to the system, to set up programs and work out any "bugs" in the operation.

It was stressed that the data was to be treated in confidence and that the data was to be used to write a report on G.I.S. impact upon users and counseling programs, not to evaluate individual counselors, teachers or administrative personnel.

The responses to the User's Questionnaire were to be anonymous. The site coordinators were requested not to have the respondents use names but some type of ID number such as the last four digits of the subjects social security number.

DATA ANALYSIS

The data were keypunched directly from the questionnaire forms with the exception of the agency and public schools characteristics forms. The data were analyzed on the IBM 370-149 computer of the Computing and Data Processing Service of the University of Maine. The statistical program used was the frequencies program of the SPSS (Nu et. al., 1975).

USER CHARACTERISTICS

The User's Log was completed by a sample of participants at 10 sites. Three hundred and forty-five forms were completed. Two hundred and eleven (61.2%) of the respondents were male; 132 (38.3%) were female. The group ranged in age from 10 to 47. The mean was 17.43; the mode, 17; and the median 16.95. Hodgdon H.S., Houlton H.S., Houlton S.A.V.E., Old town H.S., Brewer, H.S., U.M.A., Lewiston H.S., Edward Little H.S., South Windham Correctional and Youth Development Center.

The files used by the sample is included in Table 1.

Table 1

Files Used by G.I.S. Participants
Using the Computer Terminal

File	Number	Percent
Occupational Information	302	87.5
Armed Services Occupational Info.	58	16.8
4 Year College Information	68	19.7
2 Year College Information	71	20.6
Graduate School	15	4.3
Financial Aid Information	9	2.6

It should be noted that 209 students used just one file, 82 two files, 40 three files, 4 four files and 2 five files. The file selected most frequently was the Occupational Information file. The file used least was the Financial Aid Information. The 2 year college and 4 year college files were used by approximately twenty percent of the group, the Armed Services Occupational Information by 16.8 percent

BATCH PROCESSING

Three sites, Houlton S.A.V.E., Lewiston H.S., and the Youth Development Center reported use of the Batch Processing Form. Individual response forms were submitted for 47 participants. Twenty one were male and 25 female. The subjects ranged in age from 5 to 28. The mean was 16.80; the mode, 16 and the median 16.42. The files used by the sample is presented in Table 2.

Table 2

Files Used by G.I.S. Participants
Using Batch Processing

File	Number	Percent
Occupational Information	43	91.5
Armed Services Occupational Info.	10	21.3
4 Year College Information	3	6.4
2 Year College Information	11	23.4
Graduate School	1	2.1
Financial Aid Information	1	2.1

The file having the most use was Occupational Information. The Graduate School and Financial Aid Information files were used by just one person each. The two year College Information and Armed Services Occupational Information files were used by approximately 20 percent of the group.

PUBLIC SCHOOL USER'S POST QUESTIONNAIRE

The public schoools users questionnaire was administered to 264 individuals from seven sites, all of the participating high schools and the Youth Development Center. There were 151 males and 108 females in the sample. The age ranged from 10 to 20. The mean was 16.54, the mode 17 and the median 17.01.

AGENCY USER'S POST QUESTIONNAIRE

The Agency User's Post Questionnaire was administered to 19 individuals from two sites, U.M.A. and the South Windam Correctional Center. There were 12 males and 7 females. The age ranged from 17 to 46. The mean age was 26.21; the mode, 19 and the median 22.

PART III

RESULTS

Results of the initial field trial of G.I.S. are presented in four sections. The first section consists of the presentation of the USER's LOG responses. These data provide the immediate impressions of the system that the participants had. The second section contains the responses of the individuals who utilized batch processing. The third section presents a summary of the Agency User's Post Questionnaire. The final section provides the summary of the responses on the Public School User's Post Questionnaire.

USER'S LOG

Three hundred forty-five individuals from ten sites completed the USER's LOG. The complete summary of the responses is included in Appendix C.

A. Purpose of using GIS

The participants found that the purpose of using G.I.S. was clear to them. A total of 321 of the 345 users checked "yes".

B. Directions for using G.I.S.

The individuals reported that the directions for using the GIS guide and filling out the summary sheet were clear to them. Three hundred and two of the 345 users checked "yes."

C. Plans of users as a result of using GIS system.

As a result of using the GIS system, the users said that they would do the following:

120 or 34.8% would talk with their counselor

45 or 13.0% would talk with their teachers

148 or 42.9% would talk with their parents

138 or 40.0% would talk with people who are in the occupations

88 or 25.5% would write for school catalogs and information

120 or 34.8% would get more books and materials to read on the topic

Only 47 of the group did not check one source. One hundred and five checked just one activity they planned to do. The two most popular options were talk with parents and talk with people in occupations. Eighty-seven checked two sources. The most popular were counselor-parents and people in occupations--read more books and materials. Sixty-two marked three. The two most popular were talk with counselor, parents and write for school catalogs and information and talk with counselor, parents and people who are in occupations. Twenty two checked four sources, eleven five sources and six 6 sources.

D. Interest in using GIS.

Two hundred and forty-three reported that they liked to use GIS. Only 4 of the 345 users said they disliked using it. Ninety-three or 27% said it was O.K.

E. Value of GIS.

One hundred and seven or 31% checked they were not sure of the value of GIS now while 96 (27.8%) stated that they needed more information than they got. About three-eighths of the group or 130 said they got all the information they needed.

F. General reaction to using GIS.

The majority of users, 216 of the 345 participants, marked that GIS was useful and that they learned things which would help them. Slightly over ten percent, 36 users, checked that it already had helped them to make vocational or educational choices.

G. Problems in using the terminal.

About three quarters of the users reported that they did not have any problems in using the computer terminal. Thirty-six or 10.4 percent said that they did have problems using the terminal. Sixty individuals did not respond to the question.

COMMENTS

One hundred and two users wrote comments about the system.

A thematic analysis of the statements of frequency indicated the following themes in rank order:

1. GIS was easy to learn, use and understand.
2. GIS was a good thing, useful, helpful.

3. Enjoyed using GIS. It was fun.
4. GIS was confusing, didn't know how to get right file, operate terminal.
5. It helped me on my decision making, career to choose, college to select.
6. GIS did not have the type of information I wanted.
7. Not interested. Did it because I had to.
8. Like to know more about computers.

BATCH PROCESSING

Batch Processing reaction forms were submitted by three sites. A total of 47 individuals completed the form. The complete summary of responses is included in Appendix D.

A. Purpose of using GIS.

The participants found that the purpose of using GIS was clear. Forty-three out of 47 users checked the purpose was clear.

B. Use of GIS guide and summary sheet.

Two thirds of the participants used the GIS guide and filled out the summary sheet, a third did not.

Only four of the 47 users reported any problems in using the guide and filling out the summary sheet.

C. Plans of Users as a result of using GIS system.

As a result of using the GIS system, the users said that they would do the following:

23 or 48.9% would talk with their counselors

8 or 17.0% would talk with their teachers

26 or 55.3% would talk with their parents

14 or 29.8% would write for school catalogs and information

13 or 27.7% would talk with people who are in the occupations

19 or 40.4% would get more books and materials to read in the topic

D. Interest in using GIS.

No one reported that they disliked using GIS, rather 83% (39 out of 47) said they enjoyed using it while 6 or 12.8% checked it was O.K., but no big thing.

E. Value of GIS.

The majority of users, 22 out of 47 or 46.8% stated they were not sure now that they got the type of information they wanted from the system. Seven or 14.9% indicated that they needed more information then they received. About a third reported that they got all the information needed.

F. General reaction to using GIS.

Slightly over a half of the users reported GIS was useful and the things they learned would help them. Six or 12.8% felt that it really helped them to make vocational and educational choices; however, 13 or 27.7% re-

ported they were not sure now and two individuals indicated they felt it didn't help them and that it was a waste of time.

G. Understanding of printout.

All the respondents felt that they could understand the GIS printout.

H. Help in interpretation of printout.

Slightly over three fourths of the batch processing users reported that they had someone help them interpret the printout, usually the counselor.

I. Comments.

The comments were few and in general indicated that GIS was a good system.

AGENCY USER'S POST QUESTIONNAIRE

Nineteen individuals from two sites completed the agency user's post questionnaire. The complete summary of responses is included in Appendix E. The mean number of requests made by the group was 3.5; the mode 6; the median 5.

A. Results of using GIS.

The following are some of the major positive results participants indicated from having used GIS:

1. Helped them clarify the educational plans they needed to make (73.7%).
2. Stimulated them to talk to people who are in the occupations they are interested in (68.4%).

3. Taught them alot about occupations (68.4%).
4. How to divide occupations into categories or groups (52.6%).
5. Learned a lot about themselves (42.1%).
6. Learned how to explore occupations (42.1%).
7. Do some reading about occupations and/or educational opportunities (42.1%).

B. Characteristics of group prior to using GIS and after using GIS.

One set of questions asked about what their vocational plans were before and after using GIS. The second set asked what the educational plans were before and after using GIS. A comparison of these two sets of items are presented in Table 3.

Table 3

Before and After Comparison of Agency User's Vocational and Educational Plans

PLANS	BEFORE		AFTER	
Vocational	N	%	N	%
Had no idea about future vocational plans	2	10.5	0	0.0
Had some vague ideas about future vocational plans	8	42.1	5	26.3
Had narrowed vocational choices to some broad areas	4	21.1	6	31.6
Had narrowed vocational choices to less than 10 occupations	5	26.3	7	36.8
Had made up mind which occupation to enter	3	15.8	5	26.3

Educational	Before N	Before %	After N	After %
Had no idea about future educational plans	1	5.3	1	0.0
Had some vague ideas about future educational plans	9	47.4	8	42.1
Had narrowed educational plans to one or two possible types	4	21.1	8	42.1
Had selected a particular road of training, but not a specific school	8	42.1	6	31.6
Had selected a specific school or program for further education	0	0.0	2	10.5

It appears that there were fewer participants with no or vague ideas about their future vocational plans after they used GIS -- a drop of from 52.6% to 26.3%. The trend was for users to identify broad areas and to then narrow down their choices.

There was the same trend toward narrowing and sharpening of educational plans but there were still about half of the group with vague ideas about their educational plans.

In a separate question, the users were asked what GIS primarily caused them to do, about one-third said it helped them increase or expand the number of occupations they were considering. The same number reported that it helped them limit or narrow the number of occupations they were considering; however, 21.1% said that they had become confused about their choice of an occupation.

The agency users were also asked how much time they spent thinking about their career plans since using GIS. The model response was six or more hours. Thirty-one percent of the group reported spending this time, twenty-one percent said they had spent three to five hours, 15.8% one to two hours and 5.3% less than one hour per week.

OVERALL EVALUATION OF GIS

There were five items included to measure different aspects of the GIS system. The first dealt with their evaluation of the information about occupations which they read on GIS. Overall their rating indicated that the information was adequate and what they wanted to know. Only 10.5% of the sample reported that the information was inadequate.

They were asked to indicate the usefulness of GIS. Overall the users reported that it was useful. No one reported that it was not useful.

They were asked to indicate their overall reaction to GIS. About two thirds of the group checked the option that GIS helped them enough that they thought that all students/clients should have the same opportunity they did.

Slightly over a third felt most of their experience with GIS was useful and that they learned some things which helped them understand themself better and to make good vocational and educational choices. Only one user marked "the use of GIS was a waste of time, it didn't help me at all."

Respondents felt that using the computer for guidance help was fun (57.9%) and a great way to get information to help with choosing occupations (63.2%). Two users reported that they felt it was boring to use the computer and one that the computer was slow.

JOB SEEKING SKILLS

There were four multiple choice questions relating to the knowledge of the users of job seeking skills. Overall most users had three out of four of the items correct. Slightly under half of the group got the item correct about identifying the least important factor in choosing their first job.

JOB MAINTENANCE SKILLS

There were five mutliple choice questions relating to the users knowledge of job maintenance skills. Users had more difficulty with these concepts and on the average had two of the five items correct.

COMMENTS OF PARTICIPANTS

Twenty comments were written in on the Agency Users Post Questionnaire. They felt that it helped them increase their career knowledge and career awareness. Some of these comments were:

> Learned about qualifications of job, schooling, work conditions.
>
> Learned to talk to people in different occupations.

It helped in their decision making. Some of these comments were:

> Gave me a more realistic view of my plans for a career.
>
> Want to have more than one career to fall back on.
>
> Helped me to see what really was reality in going toward my goals.
>
> Helped me plan a route toward some specific career instead of leaving options wide open.
>
> Before using GIS I was unsure but after using GIS I am very sure.

PUBLIC SCHOOL USER'S POST QUESTIONNAIRE

Two hundred sixty three students from six different sites responded to the user's post questionnaire. The complete summary of responses by the students using GIS can be found in Appendix F.

RESULTS OF USING GIS

The following are some of the major positive results participants indicated from using GIS.

1. They learned alot about occupations by using GIS (75.3%).
2. GIS helped them feel more sure about career plans which they already had (40.7%).
3. What educational plans they need to make (40.3%).
4. Talk to people who are in the occupation(s) which they are interested in (49.4%).
5. More about my interests as they relate to career planning (44.5%).
6. How to explore occupations (36.5%).
7. Talk with their parents (33.5%).
8. Do reading about occupations and/or educational opportunities (28.9%).

CHARACTERISTICS BEFORE AND AFTER USING GIS

One set of questions asked about what their vocational plans were before and after using GIS. The second set was concerned about that their educational plans were before and after using GIS. The comparison of these two sets of items is presented in Table 4.

Table 4

Before and After Comparison of Public School User's Vocational and Educational Plans

Plans	Before N	Before %	After N	After %
Vocational				
Had no idea about future vocational plans	35	13.1	21	8.0
Had some vague ideas about future vocational plans	95	36.1	81	30.8
Had narrowed vocational choices to some broad areas	44	16.7	49	18.6
Had narrowed vocational choices to less than 10 occupations	53	20.2	54	20.5
Had made up my mind which occupation to enter	62	23.6	69	26.2
Educational				
Had no idea about future educational plans	46	17.5	24	9.1
Had some vague idea about future educational plans	96	36.5	73	27.8
Had narrowed educational plans to one or two possible types	45	17.1	63	24.0
Had selected a particular road of training, but not a specific school	63	24.0	73	27.8
Had selected a specific school or program for further education	32	12.2	36	13.7

There was a decrease in the number of students reporting that they had no or a vague idea about their future vocational plans (130 to 102). There was a slight increase in the number of students who were able to narrow their vocational choice after using GIS than before.

The same pattern held for eéucational plans. One hundred and forty two individuals said that they had no or a vague idea before using GIS and 97 reported this was true afterwards. There was an increase from 17.1% to 24% of students who had narrowed their educational plans to one or two possible types after using GIS.

EVALUATION OF GIS

There were seven items which required students to evaluate different aspects of GIS such as the content, words and ideas, the interest etc. First of all, the students were asked their reaction of using the computer for guidance help. The largest group of respondents, 211 or 80.2% checked that the computer is a great way of getting information to help with choosing occupations. One hundred-six or 70.7% reported that it was fun to use a computer terminal. A third felt that GIS was a pleasant personal experience.

There were asked to react to the content of GIS. About two-thirds indicated that they thought that most of the information received was excellent, while half indicated that all parts of GIS were useful. Some (41 or 15.6%) felt that GIS provided more information than needed.

One eighth of the sample felt there were lots of things left out which they needed. There were a small number of students (10-15) who felt that some of the information received was poor and that had a hard time understanding what some of the material had to do with career decision making.

The words and ideas in GIS presented no problem to the majority of users. About two thirds stated that they did not have any trouble with the words, and one-half checked that they did not have any trouble understanding the ideas presented. It should be noted that 50 users did have difficulty with understanding the words.

Most users enjoyed using GIS and none reported that they disliked using it. About twenty percent checked that GIS was O.K., but no big thing. Seventy-one said that they looked forward to their appointments with GIS.

They were asked to rate the information about occupations that they read in GIS. Two-thirds indicated that GIS told them most of what they wanted to know. Only 19 students (7.2%) felt that the information was inadequate.

They were asked how GIS could be improved and they reacted to the following six options in this manner:

21 or 8.0% felt that the machine should move a lot faster

47 or 17.9% indicated that they would like the directions simpler

55 or 20.9% would like more aptitude information about them in it

56 or 21.3% would like GIS easier to read

56 or 21.3% would like GIS to have more or better information about occupations.

39 or 14.8% wanted some plan to allow them to discuss what they learned from GIS with their counselor.

Twenty students wrote their suggestions for improvement of GIS. The main suggestion related to more and improved occupational information. Secondly, some students felt the directions and examples could be improved. Other suggestions did not directly relate to the content of GIS but to the operation of the system.

ADDITIONAL CHARACTERISTICS OF HIGH SCHOOL USERS

Educational Aspirations

The students were asked to list the highest level of schooling they thought they would seek and then if there were not obstacles, the minimum they would like to get.

Table 5

Educational Aspirations of Student Users

	EXPECT		LIKE	
	N	%	N	%
Quit School	14	5.3	4	1.5
Graduate from H.S.	91	34.6	50	19.0
Graduate from Vocational technical school	70	26.6	88	33.5
Graduate from 2 yr. college	49	18.6	43	16.3
Graduate from 4 yr. college	X	X	43	16.3
Graduate from Prof. school after college	33	12.5	30	11.4

Overall the sample does not appear to be college oriented. Only about one third indicated that 4 year college was in their future plans. The 4 year college option was omitted in one of the items so an exact comparison cannot be made.

Some of these suggestions were for more terminals and having it available earlier in a student's program.

JOB SEEKING SKILLS

There were four multiple choice questions to assess knowledge of job seeking skills. In general, two thirds of seven-eights of the students got the items right. The hardest item for the groups inquired as to what factor of the four given should be the least important in choosing the first job.

JOB MAINTENANCE SKILLS

There were four multiple choice questions to assess job maintenance skills. Overall the students showed less understanding of these skills and concepts. On two of the items less than half of the group got the item right and only 87% got the third item correct. Students had little knowledge of the organizational structure of industry and importance of rules and regulations. Many didn't know what initiative was or meant.

WORK EXPERIENCE OF STUDENTS

Students were asked how many hours a week they normally worked at a paid job outside their home in addition to going to school. The mode was none. One hundred or thirty-eight percent of the group reported that they did not work outside their home at a paid job. Sixty percent of the group did have jobs. Twenty-eight or 10.6% worked 1 to 5, 26 or 9.9% worked 11 to 15 hours; 36 or 13.7% worked 16 to 20 hours and 46 or 17.5% worked more than twenty hours.

DISCUSSION PEOPLE UTILIZED FOR POST HIGH SCHOOL PLANS

Students were asked how often they discussed their post high school plans with nine different groups. In rank order of the frequency of use of groups is as follows:

1. Friends of own age
2. Parents
3. Relative other than parent
4. Other adult not mentioned above
5. Guidance counselor
6. Teacher
7. Clergy
8. Principal
9. State employment service officer

Parents and peers were the most frequently used sources to discuss post high school plans. It is interesting to note that school personnel, guidance counselors, teachers and principals are in the bottom half of the distribution.

COMMENTS

Student wrote in fifty comments dealing with the impact of GIS on them. The comments are included in Appendix G. Certain themes are evident, these are:

1. GIS helped me to make a specific career or educational decision.
2. GIS helped me understand more about the process of decision making and to become aware of more career fields and educational opportunities.
3. GIS helped me develop self awareness, become aware of my interests, values etc.
4. GIS was fun, interesting.
5. GIS did not help, didn't have enough information, didn't provide anything I didn't already know, sometimes even made me more confused than I am now.

COMMENTS ON THE EVALUATION OF GIS

There were ninety-seven comments dealing with evaluating one or more phases of the GIS program. A

sample of these comments are listed in Appendix H. Certain themes are evident, these are:

1. Students enjoyed using the terminal
2. Some students had problems using the terminal and did not understand the mechanics of using GIS.
3. Some students prefer human interaction to computer interaction.
4. Some students felt that the content or files were excellent, some O.K. and some poor.

UMO STAFF CONCERNS CONCERNING THE PILOT TEST

The evaluation staff had a number of concerns about the initial pilot testing of the project. The following are a list of the concerns:

1. The instrumentation format, reliability/validity
2. Readability of the forms
3. Sampling procedures utilized by the sites
4. Time of year of pilot testing in the schools
5. Awareness of project staff of MOICC objectives

INSTRUMENTATION

The initial instruments used in the study were adapted from other studies that had been conducted on the impact of computerized guidance systems on selected users. The site coordinators were involved in the critiquing of the modi-

fication of the instruments. The adaptations of the instruments make it easy to compare the impact of GIS to the impact that other systems have had on other users. The instruments had "face" validity. Nevertheless, there were some misunderstandings that did arise especially in the use of the public school characteristics form (Appendix B).

In reviewing the post questionnaires, certain problems were identified. There were problems dealing with mode of response. Some items called for one response only and others for individuals to check all that are appropriate. There is some repetition of items also, where the same type of information is asked for more than once. Another problem area is in gaps of information. There are no specific questions on some of the files included in GIS. There are also some demographic types of information such as class, high school program, etc. that were not asked that would be helpful in determining the impact on specific groups rather than individuals in general.

The staff will be getting the comments of the site coordinators at the July workshop and will utilize their ideas as well as those developed through the internal audit to revise the instruments. The instruments will be changed also so that IBM 1230 answer sheets can be used or the information more easily keypunched

from the form:

READABILITY

The instruments were reviewed for readability by Dr. Dodd Roberts, a professor of reading and language arts at the University of Maine at Orono. Also students were asked if they had any problems on reading the forms. Overall, most students did not have problems reading the forms. A few did, however. The staff feels the format could be simpler and the instruments somewhat shorter.

SAMPLING

One of the major factors that could effect the generalizability of results is the type of sampling procedures utilized. If the sample utilized by the site coordinator is not representative, then it would be impossible to generalize from the results of this study. Sampling procedures is one of the topics to be discussed with the site coordinators during the July workshop.

TIME OF YEAR

The GIS system was not fully operational at the sites until late April. The site coordinators had limited time to implement the system and work the system into their regular guidance program. Starting

at the beginning of the year and having it worked into the regular program should lead to better regular measures of the impact of the system. It was really installed too late in the year to have much value to seniors.

AWARENESS OF PROJECT STAFF OF MOICC OBJECTIVES

This impact study was designed to test the effectiveness of the sites in accomplishing objectives that the MOICC staff has set. The seven areas were:

1. self-awareness
2. career awareness
3. goal setting
4. decision making
5. problem solving
6. knowledge of job seeking skills
7. knowledge of job keeping skills

The GIS system is one of the guidance tools that can be used to help develop these competencies. The variable which affects the accomplishment of these objectives and competencies on the part of the users is the program developed by the site coordinators to utilize GIS. GIS in and of itself is not likely to surreptitiously accomplish these goals.

PART IV

INFERENCE EFFECTS

The following inferences can be drawn from the data presented:

1. The primary impact of the GIS has been on career awareness of the users. The majority of users called up the occupational files. In general, the files have increased their knowledge of career fields.
2. The system has had some impact on goal setting. A number of users from both agency sites and public school sites have sharpened their occupational and educational goals as a result of using GIS.
3. The system has aided in decision making skills both in the vocational and educational domains. Users remark that the system has helped them determine what college to attend, what job area or specific job they should consider as well as having to weigh the job and educational requirements.
4. It has had limited impact on Self-Awareness, possibly because this is not a function that is built into the files.

5. There is little evidence of the impact of GIS on problem solving at the time of this preliminary report.
6. Agency users have better knowledge of job keeping skills than public school users.
7. Agency users have slightly better knowledge of job seeking skills than public school users but there is not a marked difference between the two groups. Both appear to have good knowledge, at least from the limited sample of information elicited in the study.
8. The majority of users enjoyed using the system and found it interesting and valuable.
9. There were more males than females who used the system. Is this due to sampling or by choice? Do women have an aversion to the computer?
10. There were a number of students who were confused on the operation of the system. Provision needs to be made so that they have proper guidance in using the system and help is readily available.
11. Some students became more confused when they used the system. Provision needs to be made in the program so that these students have access to the counselor immediately to talk over problem areas.

12. The computer is not going to be an accepted and valuable tool for all students. There needs to be alternative strategies developed for users who prefer not to use the system. They should not be forced to use GIS if they don't want to do so.
13. The impact that GIS makes will be a function of the program established by each site.

In summary, the results of this preliminary field test suggest a variety of speculations regarding student needs, counselor role and curriculum needs in the public schools. Agency data are too sparse to draw meaningful conclusions, but the data suggest that a more precise strategy is needed to introduce potential users to GIS.

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APPENDICES

MOICC Career Guidance Impact Study

Agency Site Characteristics Form

Any of the following information would be useful to us in writing a general description of your site. Please respond as accurately and fully as possible.

1. Describe the administration/organization of the agency unit:

   Who is the chief administrative officer?_____

2. Description of governing authority:

   ____Elected Board
   ____Appointed Board
   ____Elected officer or commissioner
   ____Appointed officer or commissioner

3. Fiscal control:

   Source of funding_____

   How autonomous is the site on budget expenditures?_____

4. Structure of Agency Unit in GIS Project:

   Number of sub units within organization using GIS:_____

   Role and function of each sub unit_____

5. Staff Characteristics:

   A. Total # of full time staff_____
   B. Total # of counseling staff_____
   C. Breakdown of staff by sex M_____
      F_____
   D. Indicate level of training had by staff
      1. Bachelor's degree_____ Field or major_____
      2. Master's degree _____ Field or major_____
      3. Doctorate degree_____ Field or major_____
      4. Less than Bachelor's___ Field or major_____
   E. Length of employment of staff in unit
      ____1 year or less
      ____2-5 years
      ____6-10 years
      ____more than ten
   F. Type of training or specialization received (for most staff, e.g. rehab. counseling)

      _____

6. Characteristics of Clients Served by Agency

   A. Educational level (distribution of level)
      ____Percentage less than grade 8
      ~~____Percentage less than grade 10~~
      ____Percentage completing high school
      ____Percentage completing two years of post-secondary
      ____Percentage completing four year degree

B. Special Groups Served:

____Percentage handicapped (as defined by your agency)
____Percentage low income (as defined by your agency)
____Percentage classified as minority group (as defined by your agency)

7. Expenditures Per Client (average) - not salaries or direct benefits._____

8. How do you perceive community support for the agency

____Community very supportive
____Community somewhat supportive
____Community not very supportive

9. Program Characteristics:

Type of training programs_____

_____

Type of remedial programs_____

_____

Type of skill programs_____

_____

Counselor or staff/client ratio_____

How are clients selected or recruited_____

_____

Percent of clients who finish or attend training programs_____

_____

10. Adoption strategy being used to integrate the GIS Career Information System within the mission of the Agency: _____

Q _____

11. Staff training activities being used to introduce the GIS Career Information System:_____

_____

Please attach any supporting documents that would assist us in <u>understanding the mission</u> of your agency.

Prepared 4/24/79 by Center for Career Education, College of Education, UMO.

B. Special Groups Served:

____Percentage handicapped (as defined by your agency)
____Percentage low income (as defined by your agency)
____Percentage classified as minority group (as defined by your agency)

7. Expenditures Per Client (average) - not salaries or direct benefits._____

8. How do you perceive community support for the agency

____Community very supportive
____Community somewhat supportive
____Community not very supportive

9. Program Characteristics:

Type of training programs_____

_____

Type of remedial programs_____

_____

Type of skill programs_____

_____

Counselor or staff/client ratio_____

How are clients selected or recruited_____

_____

Percent of clients who finish or attend training programs_____

_____

10. Adoption strategy being used to integrate the GIS Career Information System within the mission of the Agency: _____

Q _____

11. Staff training activities being used to introduce the GIS Career Information System:_____

_____

Please attach any supporting documents that would assist us in <u>understanding the mission</u> of your agency.

Prepared 4/24/79 by Center for Career Education, College of Education, UMO.

MOICC Career Guidance Impact Study

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   Who is the chief administrative officer?_____

2. Description of governing authority:

   ____Elected Board
   ____Appointed Board
   ____Elected officer or commissioner
   ____Appointed officer or commissioner

3. Fiscal control:

   Source of funding_____

   How autonomous is the site on budget expenditures?_____

4. Structure of Agency Unit in GIS Project:

   Number of sub units within organization using GIS:_____

   Role and function of each sub unit_____

5. Staff Characteristics:

   A. Total # of full time staff_____
   B. Total # of counseling staff_____
   C. Breakdown of staff by sex M_____
      F_____
   D. Indicate level of training had by staff
      1. Bachelor's degree_____ Field or major_____
      2. Master's degree _____ Field or major_____
      3. Doctorate degree_____ Field or major_____
      4. Less than Bachelor's___ Field or major_____
   E. Length of employment of staff in unit
      ____1 year or less
      ____2-5 years
      ____6-10 years
      ____more than ten
   F. Type of training or specialization received (for most staff, e.g. rehab. counseling)

      _____

6. Characteristics of Clients Served by Agency

   A. Educational level (distribution of level)
      ____Percentage less than grade 8
      ____Percentage less than grade 10
      ____Percentage completing high school
      ____Percentage completing two years of post-secondary
      ____Percentage completing four year degree

MOICC CAREER GUIDANCE IMPACT STUDY
PUBLIC SCHOOL CHARACTERISTICS FORM

Any of the following information would be useful to us in writing a general description of your school system. Please respond as accurately and fully as possible.

1. Describe the administrative organization of the school.

   A. What is the administrative structure of your system, e.g., unified school district, county system, city system, school union, S.A.D.?

   If a unified district, please describe.

   B. Description of the School Board

      1. Number of members? _____

      2. Members elected or appointed? _____

      3. Term of office? _____

      4. Is chairman elected or appointed? _____

      5. What authority does the school board have over the budget of the school system and the setting of the school tax rate?

   C. Superintendent

      1. Tenure in system? _____

      2. Elected or appointed? _____

      3. Has the superintendent supported innovative curriculum efforts? Yes_____ No_____

      Example_____

      _____

      _____

2. Local autonomy from State Department of Education

   A. Is the base salary of teachers locally or state funded?

   _____

   B. How autonomous is the school regarding curriculum matters, e.g., selection and purchasing of textbooks?

   _____

   _____

3. Structure and number of schools

   A. How many schools in the district?

   Elementary____ Junior/middle_____ Senior High_____

   B. Predominant grade structure

   ____6-3-3 ____6-2-4 ____5-3-4 ____other

   C. What is the predominant classroom organization, e.g., traditional self contained units, open classrooms, team teaching etc.

   elementary_____

   junior/middle_____

   senior_____

4. Faculty characteristics

   A. Total number of full-time teachers _____

   B. Total number of counseling staff _____

   C. Total number of "Building level" administrative staff _____

   D. Breakdown of teaching staff by sex:

   Male_____ Female_____

   E. Number of faculty by grade:

	Male	Female
9th	_____	_____
10th	_____	_____
11th	_____	_____
12th	_____	_____

F. Description of high school teaching staff in terms of tenure in system

Percent of faculty employed in system:

1. Less than 2 years _____%
2. 2-5 years _____%
3. 6-10 years _____%
4. More than 10 years _____%

G. What has been the average number of new faculty each year over the past five years? _____

H. What proportion of the faculty have the following amounts of education?

1. Less than Bachelor's degree _____%
2. Bachelor's degree _____%
3. Masters' degree _____%
4. Specialist degree _____%
5. Doctorate degree _____%

I. Is there an active teacher's union in the district?

Yes_____ No_____

1. What percentage of the faculty are union members?

_____%

2. Please provide a brief history of the union (attach documents if appropriate).

3. What is the general attitude of the administration toward this union?

4. Does the union bargain in behalf of all faculty?

J. In general are faculty salaries above, the same as, or below the state average?

K. Have faculty salaries kept up with the increased cost of living? If not, please indicate what percentage increase, on the average, faculty have received over the last years:

_____

5. Pupil Characteristics

A. Enrollment by grade by sex:

	Male	Female
9th	_____	_____
10th	_____	_____
11th	_____	_____
12th	_____	_____

B. Minority students (as defined by you) constitute what percent of the total enrollment? _____%

C. Number of Title I students in school system _____

D. Number of free lunch or ADC students in school system _____

E. Number of EMR and SLD students _____

F. Number of students in accelerated or advanced placement classes _____

G. Trends in enrollment over past five years (please check one)

Substantial drops_____ Slowly declining_____

About the same_____ Slowly increasing_____

Substantial increase_____

Briefly provide any explanation you might have to account for the trend.

H. If "tracking," number of students in college track vs. vocational track

College bound_____ vocational track_____

I. One the average how many students move into the school district each year _____

J. Amount of absenteeism i.e., average number of days absent per student. _____

K. Total number of students in district enrolled in nonpublic schools. _____

6. Budget

A. Percent of total revenue from local funds _____%

B. Percent of total revenue from state funds _____%

C. Percent of total revenue from federal funds _____%

D. What is the tax source(s) generating local funds?

E. Per pupil expenditures

For all students $_____

For elementary students $_____

For junior/middle high students $_____

For senior high students $_____

7. Recent Community Support for Public Education

A. Have there been any outcomes of recent bond issue elections or outcomes of other school related elections which would indicate either strong support or lack of support for public education? If so, briefly describe.

B. Please comment on the extent to which parents support, and participate in, the PTA in your district.

C. Any indications of an increasing proportion of families sending their children to private schools? Is so, please provide your understanding as to why.

D. Has there been any changes in the tax rate for public education?

E. Other evidence of community support or lack of support for public education.

APPENDIX C

MOICC CAREER GUIDANCE IMPACT STUDY
USER'S LOG

Site Name or Number 10 Sites Name or Soc. Sec. # N = 345

Date 7/11/79 Age _____ Sex: M 211 (61.2) F 132 (38.3) (circle one) Missing 2 (0.0)

Directions: Please respond to the following items by checking one or more categories as they apply to you.

File or files used (check those appropriate)

302 Occupational Information OCCU
58 Armed Services Occupational Information ASOC
68 4 Year College Information Col 4
71 2 Year College Information Col 2
15 Graduate School GRAD
9 Financial Aid Information File AIDS

1. Was the purpose of using GIS clear to you? 321 Yes 11 No missing (5)

2. Were the directions for using the GIS Guide and filling out the Summary Sheet clear to you? 302 Yes 35 No Missing (8)

3. As a result of using the GIS system, I am planning to (check as many as are appropriate)
   120 talk with my counselor
   45 talk with my teachers
   148 talk with my parents
   138 talk with people who are in the occupations
   88 write for school catalogs and information
   120 get more books and materials to read on the topic
   37 other (please notify) _____

4. How interesting was using the GIS system?
   243 enjoyed using it
   93 was okay
   4 disliked using it
   5 missing

5. Did you get the type of information you wanted from the system?
   130 got all the information I needed
   96 needed more information than I got
   107 am not sure now
   12 missing

6. What was your general reaction to using the system?
   19 It didn't help me at all
   5 It was quite a waste of time
   60 I am not sure now
   216 It was useful. I learned things which will help me
   36 It really helped me to make vocational or educational choices
   6 missing

Answer this question if you used the terminal.

7. Did you have any problems in using the computer terminal? 36 Yes 249 No missing (60)

Please comment _____

Prepared by Staff Career Education Center, College of Education, UMO
April 25, 1979

MOICC CAREER GUIDANCE IMPACT STUDY
BATCH PROCESSING REACTION FORM

Site Name or Number_____ Name or Soc. Sec. # N = 47

Date 7/11/79 Age_____ Sex: M F (circle one)
(21) (26)

4 = 2
11 = 30
15 = 15

File or files used (check those appropriate)
- 44 Occupational Information OCCU
- 10 Armed Services Occupational Information ASOC
- 3 4 Year College Information Col 4
- 11 2 Year College Information Col 2
- 1 Graduate School GRAD
- 1 Financial Aid Information File AIDS

1. Was the purpose of using the computer service clear to you? 43 Yes 3 No

2. Did you use the GIS guide and fill out the summary sheet? 30 Yes 16 No
   If yes, did you have any problems in doing this? 4 Yes 27 No

4. As a result of using the GIS system, I am planning to (check as many as are appropriate)
   - 23 talk with my counselor
   - 8 talk with my teachers
   - 26 talk with my parents
   - 13 talk with people who are in the occupation
   - 14 write for school catalogs and information
   - 19 get more books and materials to read on the topic
   - 2 other (please specify)_____

5. How interesting to you was using the GIS system?
   - 39 enjoyed using it
   - 6 was okay, but no big thing
   - 0 hated using it
   - 2 missing

6. Did you get the type of information you wanted from the system?
   - 16 got all the information I needed
   - 7 needed more information than I got
   - 22 am not sure now

7. What was your general reaction to using the system?
   - 2 It didn't help me at all. It was quite a waste of time.
   - 13 I am not sure now
   - 25 It was useful. I learned things which will help me.
   - 6 It really helped me to make vocational or educational choices.

8. Did you understand the GIS printout? 46 Yes 0 No If no, why not?_____

9. Did someone go over or help you interpret the printout? 36 Yes 7 No
   If yes, who?_____

Other comments:_____

Prepared by Staff, Career Education Center, College of Education, UMO, April 26, 1979

MOICC CAREER GUIDANCE IMPACT STUDY
Agency Users Post Questionnaire

Site Name or Number N = 19 Name or Soc. Sec. #_____

Date_____ Age_____ Sex: M 12 F 7 (circle one)
range 17-46 x = 26.21
Md = 22.00
SD = 9.157

1. Results of using GIS
   10 a. I had some career plans in mind before using GIS (occupations and/or plans for going to school), and I still have those same plans in mind.
   7 b. GIS helped me feel more sure about career plans which I already had.
   5 c. I had no idea what occupations to enter when I started using GIS; now I feel pretty sure.
   1 d. GIS made be doubt career plans I had before; now I'm confused.
   3 e. I had no idea what occupations to enter when I started using GIS; I still have no ideas.
   8 f. I learned a lot about myself using GIS.
   2 g. I didn't learn anything about myself by using GIS.
   13 h. I learned a lot about occupations by using GIS.
   1 i. I didn't learn anything new about occupations by using GIS.
   5 j. I learned a lot about how to make career decisions by using GIS
   2 k. I didn't learn anything new about how to make career decisions by using GIS.

   Additional comments:_____

2. As a result of using GIS, I learned
   6 a. More about my values.
   7 b. More about my interests.
   6 c. More about my abilities
   10 d. How to divide occupations into groups or categories
   8 e. How to explore occupations
   5 f. What kind of decision-maker I am
   5 g. How to make planful decisions
   9 h. A lot about occupations
   4 i. How to plan my career
   14 j. What educational plans I need to make.

3. Using GIS caused me to
   4 a. Want to see my counselor more.
   1 b. Want to see my counselor less
   4 c. Talk with teacher(s)
   3 d. Talk with parent(s)
   7 e. Use books and other materials in the school library
   5 f. Use books and other materials in theoguidance office
   13 g. Talk to people who are in the occupation(s) which I'm interested in.
   3 h. Other:_____

4. Before using GIS, I
   2 a. Had no idea about my future vocational plans.
   8 b. Had some vague ideas about my future vocational plans
   4 c. Had narrowed my vocational choices to some broad areas
   5 d. Had narrowed my vocational choices to less than 10 occupations
   3 e. Had made up my mind which occupation to enter

5. Before using GIS, I
   1 a. Had no idea about my future educational plans
   9 b. Had some vague ideas about my future educational plans
   4 c. Had narrowed my educational plans to one or two possible types of training.
   8 d. Had selected a particular road of training, but not a specific school or program
   0 e. Had selected a specific school or program for further education or training
   0 f. Had selected a specific school or program for further education or training.

6. After using GIS, I
   0 a. Had no idea about my future vocational plans
   5 b. Had some vague ideas about my future vocational plans
   6 c. Had narrowed my vocational choices to some broad areas
   7 d. Had narrowed my vocational choices to less than 10 occupations
   5 e. Had made up my mind which occupation to enter

7. After using GIS, I
   0 a. Had no ideas about my future educational plans
   8 b. Had some vague ideas about my future educational plans
   8 c. Had narrowed my educational plans to one or two possible types of training
   6 d. Had selected a particular road of training, but not a specific school or program
   2 e. Had selected a specific school or program for further education or training.

8. Using GIS primarily caused me to
   6 a. Increase or expand the number of occupations I am considering
   7 b. Limit or narrow the number of occupations I am considering
   1 c. Select one specific occupation
   3 d. Confirm my plans to enter an occupation(s) which I had already selected.
   4 e. Become confused about my choice of an occupation
   1 f. Other (please specify)_____

9. Using GIS caused me to
   8 a. Do some reading about occupations and/or educational opportunities
   5 b. Talk to my counselor
   5 c. Talk to my parent(s)
   7 d. Talk to people in an occupation or in a particular school
   7 e. More than one of the above
   5 f. Other (please specify)_____

10. The information about occupations which I read in GIS
   4 a. Told me everything that I wanted to know about my occupation(s)
   11 b. Told me most of what I wanted to know
   2 c. Was inadequate
   1 d. Told me more than I wanted to know

11. Circle the number that best indicates how many requests you have made
   0 a. no requests
   2 b. one request
   2 c. two requests
   5 d. three requests
   2 e. four requests
   6 f. five or more requests

12. Please summarize your overall reaction to GIS by selecting the one response which describes it best
   1 a. Use of GIS was a waste of time; it didn't help me at all
   7 b. Most of my experience with GIS was useful; I learned some things which helped me to understand myself better and to make good vocational and educational choices
   1 c. All of my experience with GIS was useful; it really helped me to make vocational and educational choices
   12 d. GIS helped me enough that I think that all students/clients should have the same opportunity I did.

13. Place a check on the line that best indicates how useful GIS was
   0 a. Not useful
   1 b. slightly useful
   7 c. moderately useful
   7 d. very useful
   3 e. extremely useful

If you used the terminal, answer question 14.

14. Using a computer for guidance help
   11 a. It is fun to use a computer terminal
   2 b. It is boring to use a computer terminal
   4 c. The computer is very objective; it doesn't care about my grades or sex or race.
   0 d. Using GIS is a very cold, impersonal experience
   7 e. Using GIS is a pleasant personal experience
   0 f. The computer never works
   3 g. It's very frustrating when the computer doesn't work
   0 h. Students should always have help from a human, never a computer
   12 i. The computer is a great way to get information to help with choosing occupations
   1 j. The computer is slow

Additional comments: _____

_____

15. How much time have you spent thinking about your career plans since using GIS?
   1 a. less than one (1) hour per week
   2 b. One to two hours per week
   4 c. Three to five hours per week
   6 d. Six or more hours per week

PART 2

Questions 16-23 are multiple choice and you are to choose the best answer from four alternatives listed. Choose only one answer for each question by circling the letter which corresponds to the answer you choose.

16. When selecting an occupation or career, a person should consider which of the following factors?
   0 a. will this occupation permit me to express my personality?
   0 b. will I be happy in this occupation?
   1 c. will I earn enough money to provide for my family?
   17 d. all of the above
   1 missing
17. Which of the following should be least important in choosing the first job?
   8 a. chances for advancement and promotion
   8 b. beginning salary
   1 c. job satisfaction
   1 d. ability to do a good job
   1 missing
18. In completing an application for a job, which of the following is least important?
   0 a. read the application completely to be sure you understand it
   18 b. give your nickname so the employer will know what to call you
   0 c. print or type all the information requested
   0 d. fill in all the blanks possible
   1 missing
19. If a person were interested in inventing things at home while working on another job, he should:
   2 a. be aware of "moonlighting" biases
   11 b. know his company's roles, policies and expectations concerning inventions by employees.
   5 c. invent things that would be useful for his company
   0 d. draw overtime pay for work after hours
   1 missing
20. A company Organizational Chart:
   6 a. is used to show workers how to carry out their jobs in the company
   6 b. is used to show lines of authority within the company
   2 c. is an alphabetical listing of all employees in the company
   3 d. is a map showing the locations of other offices in the company.
   2 missing
21. On the job, we must be sensitive to the needs of various people. Of the following, whose needs should be considered?
   0 a. our own
   0 b. our fellow worker
   2 c. the employer
   16 d. all of the above
   1 missing

22. Which of the following best describes initiative?
7 a. ability to "stick to it."
0 b. never do more than required
10 c. ability to see what needs to be done and doing it
1 d. a combination of trustworthiness and dependability
1 missing

23. The best way to learn what is involved in a particular job is to:
2 a. read about the job in a brochure or book
0 b. observe a motion picture about the job
16 c. visit the job site and talk with someone who does the job
2 d. read about the job in the "want ad" section of the paper
1 missing

24. The above questions were:
16 a. easy to read
2 b. hard to read
1 missing

Were the items read to you?

Yes	18 No	1 missing (circle one)

How valuable was this help?

9 very helpful
1 helpful
9 No help
9 missing

MOICC Career Guidance and Impact Study

Public School User's Post Questionnaire

Site Name_____ Name or Soc. Sec. # N = 263

Date 7/11/79 Age_____ Sex_____ M F (circle one)
151 108

Part 1. Please place a check (✓) in front of any of the following statements which you agree with:

1. Using a computer for guidance help

186 a. It is fun to use a computer terminal
4 b. It is boring to use a computer terminal
74 c. The computer is very objective ; it doesn't care about my grades or sex or race
2 d. Using GIS is a very cold, impersonal experience
90 e. Using GIS is a pleasant personal experience
1 f. The computer never works
19 g. It's very frustrating when the computer doesn't work
3 h. Students should always have help from a human, never a computer
211 i. The computer is a great way to get information to help with choosing occupations
6 j. The computer is slow

Additional comments:_____

2. The content of GIS

41 a. There's more information than is needed.
132 b. I found all the parts of GIS to be useful.
33 c. There were a lot of things left out which I needed
15 d. I had a hard time understanding what some of the material had to do with career decision-making
9 e. I didn't like having to use it in a certain order
14 f. I think some of the information received was poor
166 g. I think that most of the information received was excellent

Additional comments:_____

3. The words and ideas in GIS

4 a. I had a hard time understanding a lot of the words
44 b. I had difficulty understanding some of the words
163 c. I didn't have any trouble understanding the words
27 d. I didn't understand some of the ideas being presented
135 e. I didn't have any trouble understanding the ideas being presented
2 f. GIS is too difficult for students of my age

Additional comments:_____

4. How interesting was GIS

183 a. I really enjoyed using GIS.
71 b. I looked forward to my appointments with GIS
3 c. Sometimes I came to school just because I wanted to use GIS
56 d. Using GIS was okay, but no big thing
0 e. I really hated using GIS

Additional Comments: _____

_____

5. Results of using GIS

130 a. I had some career plans in mind before using GIS (occupations and/or plans for going to school), and I still have those same plans in mind
107 b. GIS helped me feel more sure about career plans which I already had
35 c. I had no idea what occupations to enter when I started using GIS; now I feel pretty sure
21 d. GIS made me doubt career plans I had before; now I'm confused
20 e. I had no idea what occupations to enter when I started using GIS; I still have no ideas

Additional comments: _____

_____

6. Results of using GIS

56 a. I learned a lot about myself using GIS
33 b. I didn't learn anything about myself by using GIS
198 c. I learned a lot about occupations by using GIS
8 d. I didn't learn anything new about occupations by using GIS
70 e. I learned a lot about how to make career decisions by using GIS
20 f. I didn't learn anything new about how to make career decisions by using GIS

Additional comments: _____

_____

7. GIS could be improved if

21 a. The machine would move a lot faster
47 b. The directions were simpler
55 c. It had more aptitude information about me in it
13 d. It were easier to read
56 e. If it had more or better information about occupations
39 f. There were some plan to allow me to discuss what I learn from GIS with my counselor

Additional comments: _____

_____

8. As a result of using GIS, I learned

60 a. More about my values as they relate to career planning
117 b. More about my interests as they relate to career planning
87 c. More about my abilities as they relate to career planning
36 d. How to relate occupations to occupational clusters
96 e. How to explore occupations.
17 f. What kind of career decision-maker I am
34 g. How to make career decisions
110 h. A lot about occupations
106 i. What educational plans I need to make

Additional comments: _____

_____

9. Please summarize your overall reaction to GIS by selecting the response which describes it best

51 a. All of my experience with GIS was useful; it really helped me to make vocational and educational choices
81 b. Most of my experience with GIS was useful; I learned some things which helped me to understand myself better and to make good vocational and educational choices
13 c. Use of GIS was a waste of time; it didn't help me at all
112 d. GIS helped me enough that I think that all students should have the same opportunity I did
6 missing

10. Using GIS caused me to

47 a. Want to see my counselor more
8 b. Want to see my counselor less
49 c. Talk with teacher(s)
88 d. Talk with parent(s)
23 e. Use books and other materials in the school library
32 f. Use books and other materials in the guidance office
130 g. Talk to people who are in the occupation(s) which I'm interested in
23 h. Other: _____

_____

11. The best thing about GIS was

58 a. The machine was fun to work with
95 b. It helped me relate information about myself to occupations
94 c. It gave me a lot of information
10 d. It was objective: it didn't care about my race or sex or anything
6 missing

12. Before using GIS, I

35 a. Had no idea about my future career plans
95 b. Had some vague ideas about my future career plans
44 c. Had narrowed my career choices to some broad areas
53 d. Had narrowed my career choices to less than 10 occupations
62 e. Had made up my mind which occupation to enter

13. Before using GIS, I

46a. Had no idea about my future educational plans
96b. Had some vague ideas about my future educational plans
45c. Had narrowed my educational plans to one or two possible types of training
63d. Had selected a particular road of training, but not a specific school or program
32e. Had selected a specific school or program for further education or training

14. After using GIS, I

21a. Had no ideas about my future vocational plans
81b. Had some vague ideas about my future vocational plans
49c. Had narrowed my vocational choices to some broad areas
54d. Had narrowed my vocational choices to less than 10 occupations
69e. Had made up my mind which occupation to enter

15. After using GIS, I

24a. Had no ideas about my future educational plans
73b. Had some vague ideas about my future educational plans
63c. Had narrowed my educational plans to one or two possible types of training
73d. Had selected a particular road of training, but not a specific school or program.
36e. Had selected a specific school or program for further education or training

16. Using GIS primarily caused me to

65a. Increase or expand the number of occupations I am considering
69b. Limit or narrow the number of occupations I am considering
28c. Select one specific occupation
59d. Confirm my plans to enter an occupation(s) which I had already selected
27e. Become confused about my choice of an occupation
15 missing

17. Using GIS caused me to

76a. Do some reading about occupations and/or educational opportunities
41b. Talk to my counselor
88c. Talk to my parent(s)
67d. Talk to people in an occupation or in a particular school
57e. More than one of the above

18. The information about occupations which I read in GIS

55a. Told me everything that I wanted to know about my occupation(s)
171b. Told me most of what I wanted to know
19c. Was inadequate
19d. Told me more than I wanted to know

19. What is the highest level of schooling that you think you will get? At a minimum do you expect to: (Mark one)

14 a. Quit school as soon as possible
91 b. Graduate from high school
70 c. Graduate from a vocational, technical, trade or business school
49 d. Graduate from a two-year or junior college
33 e. Graduate from a graduate or professional school after college
6 missing

20. How often have you discussed your plans for after high school with the following people? (Mark only one on each line)

Never	Seldom	Often		
16	80	163	a.	Your parent(s)
13	131	57	b.	A relative other than your parents
11	134	52	c.	A guidance counselor
14	119	45	d.	A teacher other than a guidance counselor
14	41	6	e.	The principal or assistant principal
15	43	19	f.	Clergy (minister, priest, rabbi, etc.)
16	26	6	g.	State employment service officer
14	84	78	h.	An adult not mentioned above
7	77	171	i.	Friends your own age

21. About how many hours a week do you normally work at a paid job outside your home in addition to going to school? (Mark one)

100 a. None
28 b. 1-5 hours per week
22 c. 6-10 hours per week
26 d. 11-15 hours per week
36 e. 16-20 hours per week
46 f. More than 20 hours per week
5 missing

22. If there were no obstacles, what is the highest level of schooling you would like to get? At a minimum would you like to: (Mark one only)

4 a. Quit school and go to work as soon as you are old enough
50 b. Graduate from high school
88 c. Graduate from vocational, technical, trade or business school
43 d. Graduate from a two-year or junior college
43 e. Graduate from a four-year college or university
30 f. Graduate from a graduate or professional school after college
5 missing

PART 2

Questions 23-30 are multiple choice and you are to choose the best answer from four alternatives listed. Choose only one answer for each question by circling the letter which corresponds to the answer you choose.

23. When selecting an occupation or career, a person should consider which of the following factors?
9 a. will this occupation permit me to express my personality?
61 b. will I be happy in this occupation?
10 c. will I earn enough money to provide for my family?
181 d. all of the above

24. Which of the following should be least important in choosing the first job?
82 a. chances for advancement and promotion
133 b. beginning salary
26 c. job satisfaction
16 d. ability to do a good job
6 missing

25. In completing an application for a job, which of the following is least important?
7 a. read the application completely to be sure you understand it
231 b. give your nickname so the employer will know what to call you
14 c. print or type all the information requested
6 d. fill in all the blanks possible.
5 missing

26. If a person were interested in inventing things at home while working on another job, he should:
44 a. be aware of "moonlighting" biases
131 b. know his company's roles, policies and expectations concerning inventions by employees
68 c. invent things that would be useful for his company
10 d. draw overtime pay for work after hours
10 missing

27. A company Organizational Chart:
79 a. is used to show workers how to carry out their jobs in the company
104 b. is used to show lines of authority within the company
28 c. is an alphabetical listing of all employees in the company
38 d. is a map showing the locations of other offices in the company.
14 missing

28. On the job, we must be sensitive to the needs of various people. Of the following, whose needs should be considered?
9 a. our own
12 b. our fellow worker
13 c. the employer
223 d. all of the above
6 missing

29. Which of the following best describes initiative?
54 a. ability to "stick to it."
8 b. never do more than required
150 c. ability to see what needs to be done and doing it
42 d. a combination of trustworthiness and dependability
9 missing

30. The best way to learn what is involved in a particular job is to:
22 a. read about the job in a brochure or book
30 b. observe a motion picture about the job
209 c. visit the job site and talk with someone who does the job
4 d. read about the job in the "want ad" section of the paper

31. The above questions were:
228 a. easy to read
29 b. hard to read
6 missing
Were the items read to you?

Yes	No	(circle one)
11	249	3 missing

How valuable was this help?
33 very helpful
140 helpful
46 no help
44 missing

APPENDIX G

Student Impact Comments Related to GIS

1. I learned about colleges I never heard of and what they are like (6).
2. I decide I might possibly want to go on to graduate school (6).
3. Should start as sophomores so we can start planning for future (11).
4. I learned a lot on the GIS training (12).
5. I already knew almost everything that was presented to me (11).
6. I agree with them all (1).
7. I learned more details about my "future" career (6).
8. Helpful (6).
9. My ideas were more or less confirmed (6).
10. GIS gave me a lot of additional information on my chosen occupation (6).
11. GIS did not help (12).
12. GIS did not cover interested occupations (11).
13. It was very interesting to see the machine work (11).
14. The GIS gave me career that I had no interest in and some interest of (11).
15. Really not sure what I'm gonna do though (11).
16. I don't like these absolute statements, I learned something about myself and career decisions (6).
17. I found out more specifically what my future plans were about (6).
18. I learned about colleges by using GIS (6).
19. I used GIS for information mainly concerning colleges rather than occupations (6).
20. I was just browsing through different occupations to see if anything interests me (1).
21. It showed me a lot of job opportunities (1).
22. I want to use it over again (6).
23. I want to send away to the addresses listed for more information (6).
24. I really think about where I was headed and what my future plans were (6).
25. I want to talk with my parents to see what they think about my choice I had made about a college or occupation (6).
26. I want to visit some colleges I'm interested in (6).
27. Started to think seriously about college (6).
28. Again, senior-not good time to me--too late in year (6).
29. Better understanding of the fields that interest me (6).
30. Be sure of what I'm going to do (11).

Representative comments from student users.

APPENDIX H

Student Evaluation Comments on GIS

1. I really enjoyed working with the computer (6).
2. I think the computer is really great (6).
3. Should be rephrased to "It's very frustrating when I don't know how to get the information I want (6).
4. It slows down once in a while (6).
5. I was fun and fascinating to see the computer work (6).
6. The computer has helped me out very much to find out about different colleges (6).
7. It is a very easy was to narrow down the number of colleges available in a certain area of study (6).
8. The computer is very helpful (6).
9. It was very helpful for me in finding the college I can go to (6).
10. The computer is very helpful. If student want help from a human it is always available (6).
11. GIS can't give any personal comments, but it's great for information (6).
12. I don't know as GIS really helped one choose one's occupation, but it does give one ideas to think on (6).
13. I think it can save a lot of time giving information on a certain occupation (6).
14. The system seems to have quite a few bugs still (6).
15. It gives you a better idea of the qualifications needed for each job (6).
16. I've only used the computer for a short time, but Mr. Davis was helping me so it wasn't impersonal (6).
17. Didn't use it (3).
18. If found the computer a new and interesting experience (11).
19. I find it very helpful (12).
20. I really think its helpful (12).
21. It did not get my information (12).
22. I know most of the occupations already listed, but it was pretty good anyway (11).
23. I especially like the job descriptions (11).
24. Widens your mind to different occupations that you never heard of (11).
25. I do think that humans should help you. Computers understand what information is given them, not real life facts about jobs, etc. (11).
26. It would be very useful for recording information about the students (11).
27. It's a big help (12).
28. Not thorough enough (1).
29. I think there should be more computer terminals available to student (1).
30. Students should have additional help from a human (1).

Representative comments from student users.