DOCUMENT RESUME

ED 035 925   CG 004 931

AUTHOR   HAVENS, ROBERT I.
TITLE   COMPUTER APPLICATIONS IN GUIDANCE AND COUNSELING.
INSTITUTION   WISCONSIN STATE UNIV., OSHKOSH.
PUB DATE   7 NOV 69
NOTE   10P.; PAPER PRESENTED AT WISCONSIN PERSONNEL AND
                GUIDANCE ASSOCIATION, STEVENS POINT, WISCONSIN,
                NOVEMBER 7, 1969

EDRS PRICE   EDRS PRICE MF-$0.25 HC-$0.60
DESCRIPTORS   COMPUTER ORIENTED PROGRAMS, *COMPUTERS, COMPUTER
                SCIENCE EDUCATION, CONFIDENTIAL RECORDS, COUNSELING,
                *DATA PROCESSING, *GUIDANCE SERVICES, *INFORMATION
                SYSTEMS, PUPIL PERSONNEL SERVICES, RECORDKEEPING,
                RESEARCH, SIMULATION

ABSTRACT
                THE PURPOSE OF THIS DISCUSSION IS TO ACQUAINT PUPIL
PERSONNEL WORKERS WITH SOME OF THE APPLICATIONS OF COMPUTER BASED
INFORMATION PROCESSING SYSTEMS FOR PUPIL SERVICES AND ALSO TO
CONSIDER SOME OF THE LEGAL AND ETHICAL CONCERNS RELATIVE TO DATA
PROCESSING IN COUNSELING AND GUIDANCE. SOME OF THE USES DISCUSSED
ARE: (1) SCHEDULING; (2) STUDENT RECORD SYSTEMS; (3) RESEARCH; (4)
RETRIEVAL; AND (5) SIMULATION. SPECIFIC USES RELATIVE TO EACH OF THE
ABOVE ARE PRESENTED. PROBLEMS RELEVANT TO COMPUTER USAGE INCLUDE: (1)
WHO SHOULD DECIDE WHAT INFORMATION SHOULD BE PLACED IN A COMPUTER
STUDENT FILE; (2) INCORRECT INFORMATION OR MACHINE ERROR; AND LACK OF
CURRENCY IN COMPUTER INFORMATION. SOLUTIONS TO THESE PROBLEMS MAY BE
USE OF: (1) A STAFF TEAM TO DECIDE WHAT INFORMATION GOES INTO A
STUDENTS FILE; (2) A YEARLY CHECK OF EACH FILE FOR ACCURACY; AND (3)
SCHOOLS SHOULD PARTICIPATE AS PART OF A SHARED DATA BANK IN ORDER TO
SAFEGUARD CONFIDENTIALITY. (KJ)

COMPUTER APPLICATIONS IN GUIDANCE AND COUNSELING

Robert I. Havens
Associate Professor
Counselor Education
Wisconsin State University
Oshkosh, Wisconsin 54901

The introduction of computer-based data processing systems presents a
wide-range of challenges and implications for pupil personnel workers. In
order for data processing systems to be most efficiently organized to provide
most effective services for the individual student, it is necessary for local
educational workers to familiarize themselves with the potential of the
computer for information processing. It is the purpose of this discussion
to acquaint pupil personnel workers with some of the applications of computer-
based information processing systems for pupil services and also to consider
some of the legal and ethical concerns relative to data processing in
counseling and guidance.

Scheduling. Most counselors are familiar with computerized scheduling. After being supplied such information as teaching stations, teacher subject area, number of teacher contact hours, teacher student ratio, and student schedule requests, the computer can build the master schedule, program each student within that schedule, and prepare schedule cards, class lists, or any other report requested by the user.

While computerized scheduling is widely used, there are two concerns to which counselors should be sensitive. First, the counselor should not become a secretary to the computer, spending a disproportionate amount of time verifying the accuracy of computer schedule cards. This is a clerical task, at best. Second, the counselor must be alert to the student who gets all of his "2nd choices" because of schedule conflicts. The computer cannot take into account the feelings and attitudes of the student--that's the counselor's responsibility.

Let us turn our attention now to four other broad areas in which computer applications may present newer implications to pupil personnel workers.

Student Record Systems. Using a computer-based system with large amounts of storage capabilities, it is possible to store, retrieve, and disseminate student environmental data. The cumulative record for each student will be contained on a small computer card (or cards) or stored on magnetic tape or disc. This information will be instantly obtainable by any one with a computer terminal. A counselor, with a terminal at his desk, would be able to retrieve any or all of the student's records, prior to or during an interview.

In addition, once this information is stored, the computer can analyze all student records to identify students who are chronically absent or tardy, have had serious illness, in any given curriculum, grade point averages, or

any other information of value. For example, as a counselor you may be interested in knowing the names of any students on a college preparatory course who have tested ability below the 50th percentile and grade point averages below a 2.5 (C+). Imagine how difficult and time consuming this task would be with current records. With a computer-based system, a request such as this could be fulfilled in seconds.

While the advantages of computer-based student record systems are many, several issues regarding confidentiality must be raised. However, I should like to delay these concerns until the discussion of all the computer applications is complete.

Research. The speed, power, and flexibility of the computer makes it a perfect tool to utilize in solving the constant need for relevant research information. Once research designs have been set, data collection procedures authorized, and statistical analyses decided upon, the computer is capable of analyzing data and preparing desired reports with little counselor intervention. Also, once the data is stored in the computer, additional data may be gathered to up-date its statistical analysis based on the new data.

Local norms and expectancy tables are the results of studies of local student populations. The computer provides for the routine development and up-dating of these tables. However, because of the ease of their development, counselors must begin to request more meaningful local norms and expectancy tables. For example, local norms should be developed for various criteria such as sex, school size, special curricula within a school, or economic background. Single variable expectancy tables should give way to multiple predictor tables which allow for more sophisticated prediction of success in various programs; such as trade and technical schools, the armed forces, practical nurses training, and various job fields.

The computer has the capability of looking for variables which may operate together in any group or individually. This capability may provide for meaningful research studies to ascertain patterns of characteristics which differentiate between groups of students at the local level. For example, patterns which characterize dropouts in a local community could be identified. Once these patterns were isolated, routine "searches" of personal characteristics of other students could be performed to identify the "potential" dropout. Once these individuals were identified, preventative programs could be developed.

A word about the old stand-by follow-up study will conclude this discussion of research. It is possible to so design a follow-up study that the respondents (former students) place their information directly on computer cards or score sheets which are automatically fed into the computer. The computer can then analyze the data and prepare the proper reports. In addition, if the student record file is computer-based, the computer can even address the follow-up requests.

The counselor need not become involved (except to assist in the design of the follow-up questionnaire) until the results are available. This should increase the conduct of follow-up studies and increase the use made of the results.

Retrieval. In addition to the previously discussed student records, other computer-based information systems have wide applications to guidance and counseling.

Walz and Rich (1967) have discussed the development of a large centralized information retrieval system. Part of the National ERIC system, this depository is provided for the storage, retrieval, and dissemination of published and

unpublished research reports on pupil personnel services. Such centers will provide counselors with valuable access to research information.

There are other kinds of storage centers which may have more impact on the counselor and client. Regional statistical data libraries are being developed throughout the country, which will periodically gather and up-date information about such factors as economic conditions, educational opportunities, transportation demands, housing, employment outlook, and population growth of a geographic region. (One is under development at Wisconsin State University-Oshkosh for the Fox River Valley Region). If properly developed and organized, this kind of information could provide the counselor and client with immediate, current information about the environment upon which to base decisions. For example, imagine a client discussing with a counselor interest in pursuing a career as a plasterer within a local community. The counselor, turning to a computer terminal, types a previously determined code, and almost instantly, counselor and client view the requirements for the position, possible apprenticeship programs, current economic conditions, number of jobs presently available, and outlook for the occupation in the local area. The implications of having this type of information immediately available during a counseling interview are wide spread. Client decision-making, based upon current information, may be much more objective and realistic.

Environmental information of many types may be stored in computer systems to be retrieved at a later date by the student at a system terminal. An internal decision-making feature of the computer allows it to compare bits of information and make decisions based upon previously established rules. For example, Impellitteri (1967) has described a project whereby the computer is used to assist junior high school students in the exploration of occupations by comparing the student's measured interests and aptitudes (previously stored)

with various occupations and selecting appropriate occupations for the student to explore. On a more practical level, Harris (1968) has described a system of vocational information retrieval developed by the guidance department at Willowbrook High School, Villa Park, Illinois.

This type of computer flexibility allows a client to explore appropriate occupational or educational areas prior to the counseling interview. The counselor's job is then one of assisting the client in synthesizing the information and integrating it into his own perceptual system.

Simulation. A more recent development of computer science which has implications for counselors is in the area of simulation. Basically, simulation is a process whereby the computer performs functions likely to occur in actual performance. An example of computer simulation would be Computer Assisted Counseling (CAC). Basically CAC has been developed and described by Cogswell and Estavan (1965) at the Systems Development Corporation in California. These computer specialists have simulated a counselor's interview procedure by observing a typical high school counselor's actions. The computer was then programmed to carry on an interview by having the client type in his questions or responses and receiving typed computer responses. Although the computer responses tend to be rather mechanical, the authors suggest that early counseling interviews are similar in nature. Computerized counseling could handle much of the routine appraisal interviewing, sending significant data to the counselor for future client contacts.

Simulation also refers to more theoretical studies where psychologists are attempting to simulate test taking and other behaviors with the computer (Helm, 1967). While these may have implications for the counseling and guidance programs in the future, now they represent interesting developments and need not take any more of our time.

Issues Relative to Computer Applications in Counseling and Guidance

While the introduction of computer-based processing systems has many implications for increasing the efficiency and effectiveness of the counselor's job, there are a series of problems related to these developments which must be considered by pupil personnel workers. While most of these concerns are related to applications such as student record storage and other forms of retrieval, they have implications for the whole area of computer applications.

The first concern centers around who should decide what information is to be placed in a computer student file. There are several interesting phenomena related to what to store in a confidential file. The first is the problem of having erroneous information placed into the computer data bank. Through a series of collection, key punching or programming errors, information may be classified or categorized incorrectly. The second phenomena is closely related to this first one and suggests an aura of computer infallibility. There tends to be a generally accepted attitude that computer print-outs must be current information. And nothing is farther from the truth. The computer can only print out what is put in or programmed. Not only is there a tendency to "believe" the computer, each time the computer "prints out" a piece of information, it appears as a new print-out; therefore, the information appears "fresh" or current. While with the current cumulative folder, pieces of information and papers can turn yellow or get ragged, that is not true with the computer print-out. So, old and out-of-date information reappears each time as if it were current, factual information.

There are some ways to deal with these problems. First, a team from the school consisting of administration, teachers, pupil personnel workers, parents, and perhaps even students should be involved in the decisions about "what" type of information is to be included within a computer file. Counselors

should take the lead in assisting these committees to examine the value of the information to ascertain its potential usefulness. Information should not be included just because it may be nice to have at some time. There should be a definite reason and potential use for all information placed in such a file.

Also, each file should be periodically (once every year) checked for accuracy; to make certain that erroneous information has not found its way into the file. Also, perhaps every two or three years, computer-based files ought to be purged of old, out-of-date information. I feel this procedure is particularly important for not only computer files but our regular cumulative folders. It must be remembered that we are in the business of "change" and we tend to believe that people can change, hopefully for the better. An example might be in order. Let's say that a student had some trouble with the school in the eighth grade but went through counseling and other services to change his outlook and in the 12th grade became a good "citizen." I question not only the legal but also the ethical implications of having the old, unchanged information kept in the student's record file.

A second issue which particularly relates to computer data banks is the problem of confidentiality and illegal disclosure. At present, much information on an individual is decentralized so that the problem of illegal disclosure is not as crucial as it will be when all pieces of information are centralized on some computerized data bank. There is the problem of unauthorized individuals obtaining a print-out of the student's file. Should secretaries, teachers, principals, and counselors all have access to the same information?

Computer experts maintain that it is possible to develop data banks in such a way as to preclude unwanted requests, the fact remains that this protection is not built into existing data banks or if it is it is minimal at most. A related problem is that many data banks are being widely linked

together through communications channels so that an individual many miles away has the potential for access to local information. This interlinking of data banks is taking place on a national scale and some inter-state legislation may be needed to protect the rights of the individual.

I would recommend that educators consider carefully this problem of illegal disclosure and demand systems designed for maximum protection. I also recommend that schools not use shared data banks for storage of sensitive information until controlling legislation is enacted. I am often asked a related question. " Should counselors store confidential or "interview" information in computer-based information retrieval systems?" Generally, because of the concerns earlier expressed, my answer must be no. Because of the nature of the information, the counselor should continue to keep his own set of confidential files which are not a part of the public domain files of the student.

Conclusion. The wide ranging applications and rapid introduction of computer-oriented data processing systems offer a unique leadership challenge to the counselor. Unless he becomes actively engaged in the development of data processing within his school system, the counselor may discover that decisions about the handling of information have been made by individuals not directly involved in guidance and counseling in the schools. These administrative decisions could very well limit the usefulness of the computer for counseling and even shape certain roles and functions for the counselor.

The school counselor must acquaint himself with the new developments in the computer field and with the potential application of the computer in guidance and counseling. He then should assume a position of local leadership and, with the assistance of the administration and the educational data processing specialist, design computer utilizations which would be most beneficial in assisting the individual student in his total development.

References

Cogswell, J. F. and Estavan, D. P. Explorations in Computer-Assisted Counseling.
    Santa Monica, California: Systems Development Corporation, 1965.

Harris, Jo Ann. "The Computerization of Vocational Information." The
    Vocational Guidance Quarterly, 1968, 17, 12-20.

Helm, Carl. "Computer Simulation Techniques for Research on Guidance Problems."
    Personnel and Guidance Journal, 1967, 46, 47-52.

Impellitteri, Joseph T. "A Computerized Occupational Information System."
    The Vocational Guidance Quarterly, 1967, 15, 262-264.

Walz, Garry R. and Rich, Juliet V. "The Impact of Information Systems on
    Counselor Preparation and Practice." Counselor Education and Supervision,
    1967, 6, 275-284.